

Systems

**IBM 3287 Printer
Models 1 and 2
Operator's Guide**





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Preface

This publication describes the basic operating procedures for the IBM 3287 Printer Models 1 and 2. It is intended for those who operate the 3287 Printer or write its detailed operating procedures.

The manual describes the 3287 printer controls, switches and indicator lights. The manual also contains procedures on operating the 3287 printer, using the paper handling devices, and replacing and adjusting the ribbon.

Refer to the *IBM 3287 Printer Models 1 and 2 Component Description* (GA27-3153) for a description of features referred to in this publication.

How to Use This Book

Operators not familiar with the 3287 Printer should first read the introduction in Chapter 1, then read Chapters 2 through 5 to become familiar with the overall operation of the printer. Contents of the individual chapters are described below. Also shown is a listing of related documents.

Chapter 1 introduces the 3287 Printer Models 1 and 2.

Chapter 2 describes the 3287 Printer operating controls, switches, and indicator lights.

Chapter 3 describes Power On/Power Off procedures, printer operation and ribbon adjustment/replacement procedures.

Chapter 4 instructs the operator in loading and adjusting paper using the Variable Width Forms Tractor and the Friction Feed Paper Handling Device.

Chapter 5 contains detailed procedures for installing and removing the Variable Width Forms Tractor, Friction Feed Paper Handling Device, Paper Roll Holder and Platen.

Related Publications:

IBM 3287 Printer Models 1 and 2 Component Description, GA27-3153
IBM 3287 Printer Models 1 and 2 Problem Determination Guide, GA27-3151
IBM 3287 Printer Models 1 and 2 Operator's Trouble Report, GX27-2923
IBM 3287 Printer Models 1 and 2 Setup Instructions, GA27-3171
IBM 3287 Printer Site Planning Guide, GA18-2018
Forms Design Reference Guide for Printers, GA24-3488

Second Edition (December 1978)

This is a major revision of, and obsoletes, GA27-3150-0. Refer to the summary of changes page for changes to this edition.

Information in this manual is subject to changes; any such changes will be reported in subsequent revisions or Technical Newsletters. Before using this publication in connection with the operation of IBM systems or equipment, refer to the latest *IBM System/370 Bibliography*, GC20-0001, and associated Technical Newsletters, for the editions that are applicable and current.

Request for copies of IBM publications should be made to your IBM representative or to the IBM branch office serving your locality.

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Summary of Changes for GA27-3150-1

This publication includes the Stage 1 and Stage 2 3287 Printer Models 1 and 2. The Stage 2 Printer is used throughout this manual to describe the 3287 printer except when it is necessary to show a difference in procedures. In this case, both the Stage 1 and Stage 2 Printers are illustrated and described in the text.

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Chapter 1. Introduction

The IBM 3287 Printer is a compact, movable, desk-top printer that can be connected (by cables) to any one of several control units. It can also be attached, through the Integrated Console Printer Adapter, to an IBM System/370 Model 138 or 148, for use as a console printer.

The 3287 is available in two models. The basic difference between the models is the printing speed. The 3287 Model 1 prints at a maximum speed of 80 characters per second, and the 3287 Model 2 prints at a maximum speed of 120 characters per second.

This publication describes two stages of the IBM 3287 Printer Models 1 and 2. Both stages of the printer perform identical functions, but are somewhat different in appearance. Throughout this publication the two stages are referred to as stage 1 and stage 2 to assist you in operating the particular printer (stage 1 or stage 2) at your location.

Figures 2-1 and 2-2 illustrate both stages of the 3287 Printer. Note the difference in the covers and operator panel.

3287 Printer Highlights

- The printer prints bidirectionally (in both directions) as the print head moves back and forth across the paper in the printer.
- Up to 132 positions (characters and spaces) can be printed on each print line. Ten characters per 25.4 mm (1 inch) are printed.
- You can select the number of print positions that you want your printer to print on a line (from 1 to 132) by using the "Setting the Maximum Print Position (MPP)" procedure in Chapter 3.
- You can select either six or eight lines of printing to the inch.
- You can select the number of lines you want the printer to print per page (01 to 99 lines), with the Page Length Control special feature.
- The 3287 Printer has specify (no charge) features and special (additional cost) features that you can have installed on your printer. For a detailed description of these features, refer to *IBM Printer Models 1 and 2 Component Description*, GA27-3153.

Forms

If the Variable Width Forms Tractor special feature is installed, the 3287 Printer can feed a thickness of up to six-part continuous forms. Five- and six-part continuous forms should be tried, on an individual basis, to ensure acceptable feeding, registration, print quality and paper handling. The maximum overall width of the forms is 381 mm (15 inches) with the Variable Width Forms Tractor and 377.9 mm (14-7/8 inches) with Friction Feed Paper Handling. Friction Feed Paper Handling is a specify feature that is used for feeding single-part, continuous roll, non-preprinted, and fan-fold paper.

Refer to the *Forms Design Reference Guide for Printers* manual, GA24-3488, for additional form specifications and limitations.

Chapter 2. Printer Controls and Indicators

Operating Controls

This chapter describes the 3287's operating controls and procedures the operator must follow to ensure correct machine operation. Your particular printer may not be equipped with all of the features and controls that are described in the following illustrations and text. For details on the controls for Stage 1 (Figure 2-1) and Stage 2 (Figure 2-2), refer to specifications **1** through **9** on the following pages.

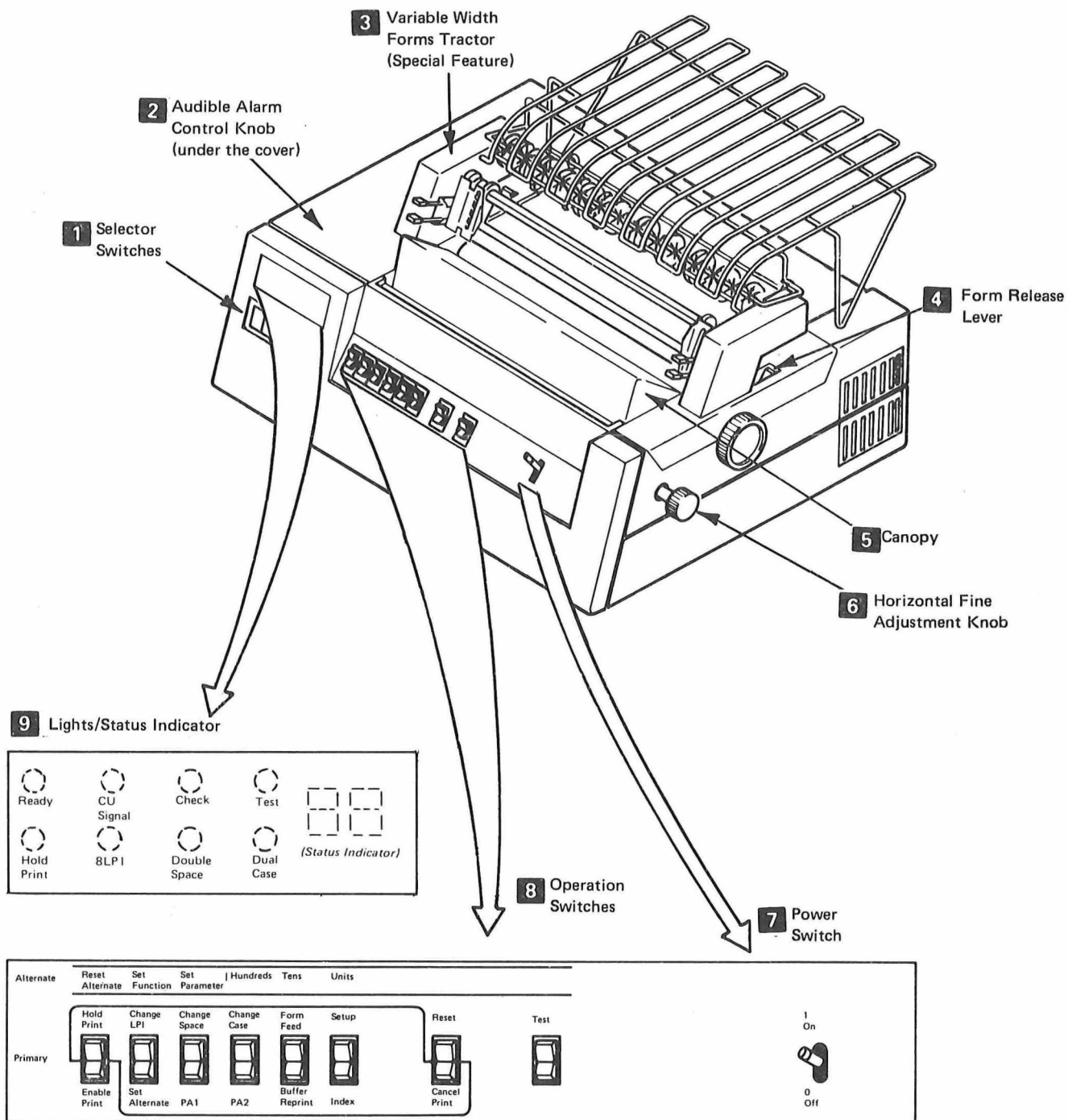


Figure 2-1. 3287 Printer, Stage 1

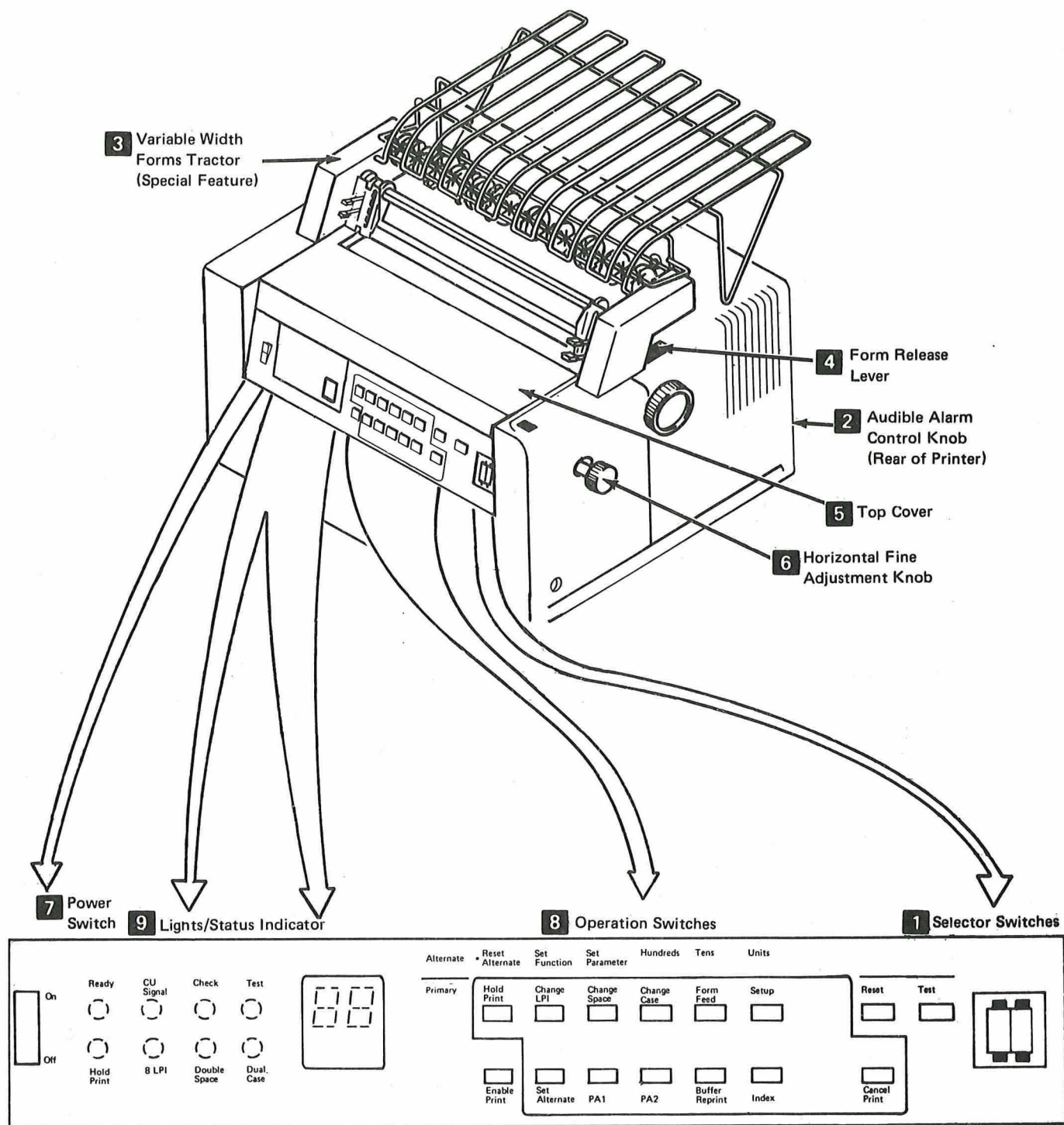
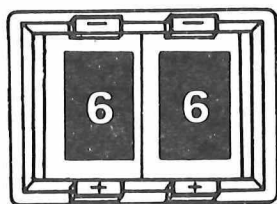


Figure 2-2. 3287 Printer, Stage 2

1 Selector Switches

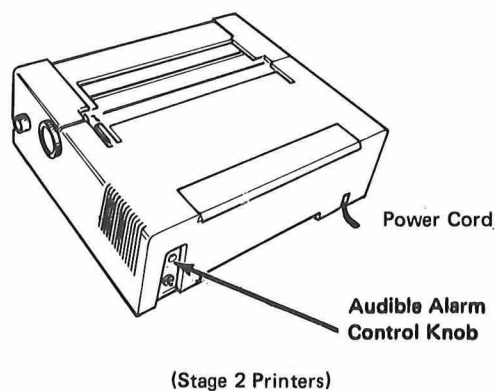
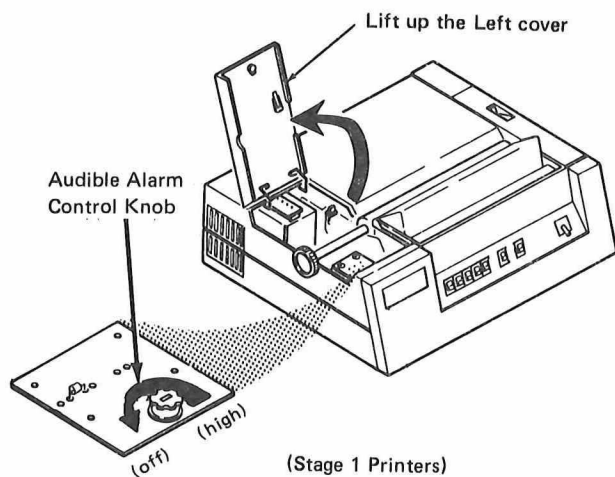


The Page Length Control Feature allows the operator to select the maximum number (00-99) of lines to be printed on a page. The operator sets the number of lines per page by entering the number in the Selector Switches. See Chapter 3 "Setting the Page Length". The number of lines entered is read from the Switches when either (1) the Form Feed switch is pressed while the 3287 is in the Hold Print condition, or (2) the Power switch is turned on.

Note: When your printer is operating in SNA Character String (SCS) mode (indicated by the Ready light blinking while your printer is in the hold print condition), the page length is specified by the System Controlling Unit (SCU [host computer or controller]) and it cannot be altered by setting the selector switches.

For more information, refer to "Setting the Page Length" in Chapter 3.

2 Audible Alarm Control Knob (Stage 1 and Stage 2 Printers)



The audible alarm sounds to notify the operator of one of the following conditions:

- The printer has run out of paper forms.
- An error has occurred at the printer.
- Certain program-specified conditions have occurred.
- The Test switch has been pressed (the alarm sounds for only 1 second).

To stop the audible alarm, press the Hold Print switch.

The operator can change the volume of the alarm by adjusting the control knob. To increase the volume, turn the knob clockwise; to reduce the volume, turn the knob counterclockwise.

The paper handling device must be removed so that the left cover can be raised to allow access to the control. Refer to one of the following procedures for removing the paper handling device.

If your machine has:

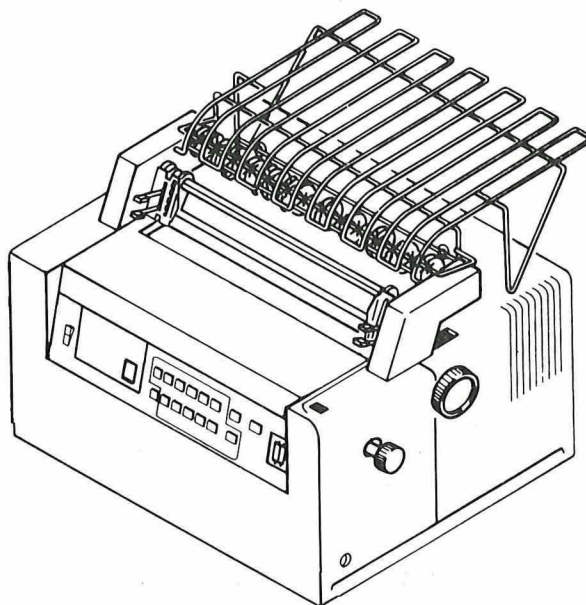
- Variable Width Forms Tractor
- Friction Feed Paper Handling Device

Refer to:

“Removing the Variable Width Forms Tractor”, in Chapter 5.

“Removing the Friction Feed Paper Holding Device”, in Chapter 5.

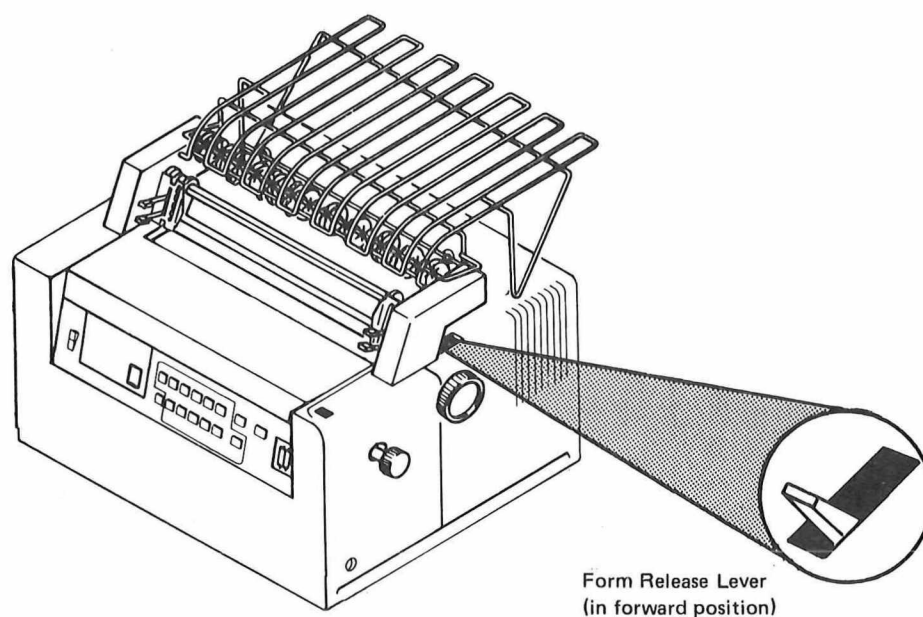
3 *Variable Width Forms Tractor (Special Feature)*



The Variable Width Forms Tractor, when attached to the 3287 Printer, controls the feeding of continuous margin-punched paper forms. For instructions on how to install it, refer to “Installing the Variable Width Forms Tractor,” in Chapter 5.

A second device, for handling single part, continuous roll, non-preprinted, and fan-fold paper is also available for the printer. See “Installing the Friction Feed Paper Handling Device”, in Chapter 5.

4 *Form Release Lever*



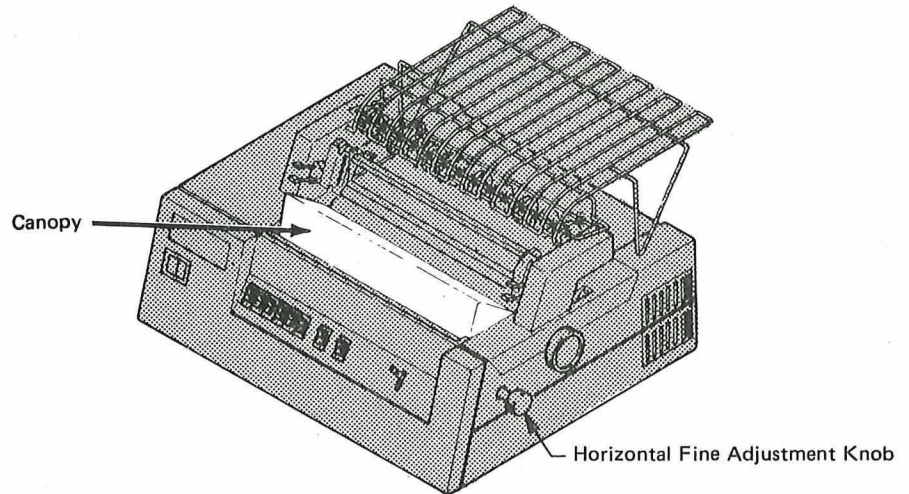
The form release lever should normally be kept in the forward position. When the form release lever is forward, the audible alarm sounds and a code is displayed in the Status Indicator when the printer runs out of paper.

The form release lever should be moved to the rear position only when paper forms are being loaded in the printer during paper loading procedures. With the form release lever in the rear position, a code is not displayed in the Status Indicator when the printer runs out of paper. You may also experience paper jams and skewing problems when the form release lever is in the rear position.

Note: Always move the form release lever to the forward position after loading paper.

5 *Canopy (Stage 1 Printers)*

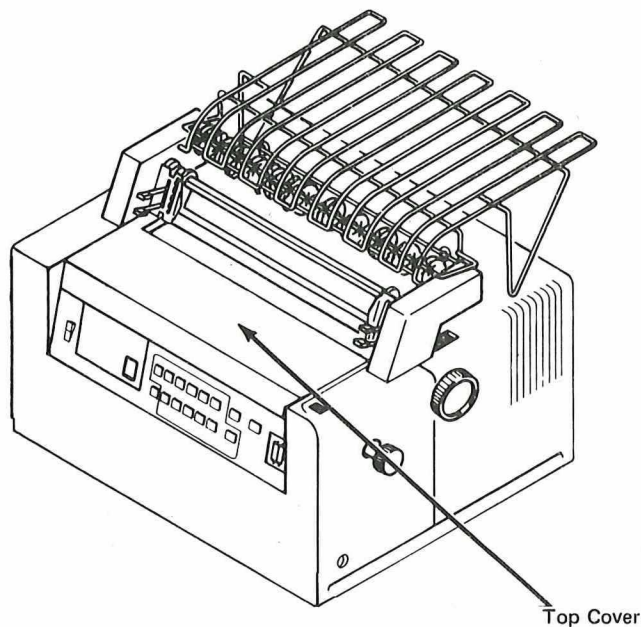
The canopy is a clear plastic cover that is used to cut down noise and prevent objects from falling into the printer. The canopy should be moved forward toward the front of the printer whenever you raise up the printer's top cover.



Top Cover (Stage 2 Printers)

The plastic top cover is used to suppress noise and prevent objects from falling into the printer. The cover also has an operator observation window. Access to the printer ribbon is made by sliding the top cover forward (toward the front of the printer).

To remove the top cover, slide it forward, lift it up and remove it from the printer.



6 *Horizontal Fine Adjustment Knob*

This knob is used to align the print position horizontally. It is turned clockwise to move the print position slightly to the right, and counterclockwise to move the print position slightly to the left.

Power Switch

7

Stage 1 Printers: When you set this toggle switch to On, power is supplied to the printer. A power-on test of the printer is automatically performed, and the basic machine functions are checked. The power-on test takes approximately 30 seconds.

Stage 2 Printers: The Stage 2 Printer Power On/Off switch is a rocker Circuit Breaker (CB) type. Its function is the same as the Stage 1 Power switch described in the previous paragraph.

8 Operation Switches

The operation switches on the 3287 Printer (Stage 1) are the dual momentary rocker type. The Stage 2 printer operation switches are the momentary pushbutton type. However, the functions of the switches are exactly the same. Therefore to illustrate and explain the use of the switches the 3287 Stage 2 panel will be used as an example.

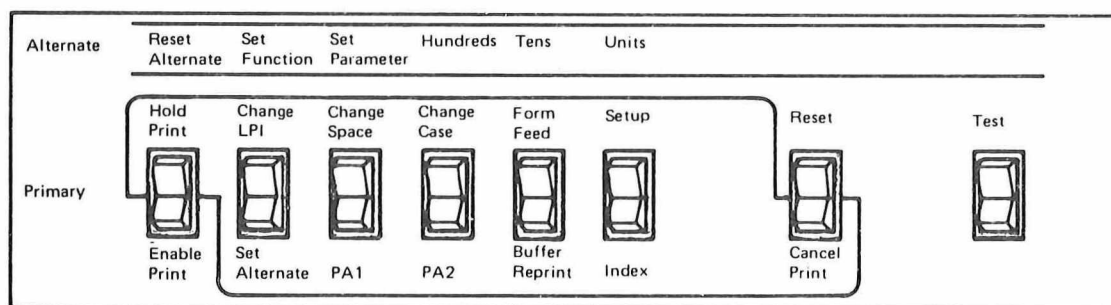


Figure 2-3. Operation Switches, Stage 1 Printers

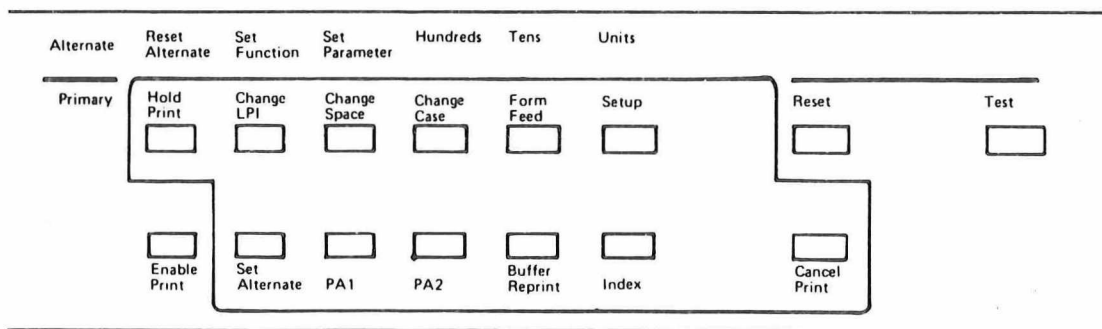
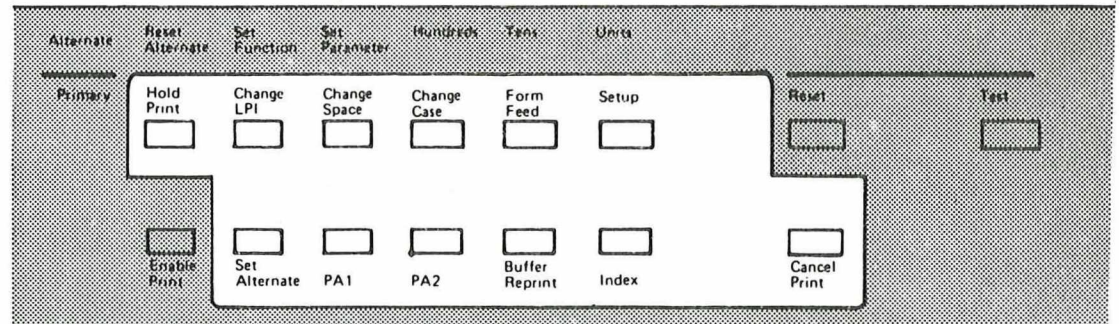


Figure 2-4. Operation Switches, Stage 2 Printers

Hold Print Switch

When you press the Hold Print switch, the following occurs:

- The Ready light goes off (if your printer is operating in SCS mode, the Ready light blinks on and off).
- The Hold Print light comes on.
- Printing stops after the operation in progress at that time has been completed.
- The print head moves to the left side of the printer.
- The following switches (in the unshaded area) are operative only while the printer is in the hold print condition.



You can take your printer out of the hold print condition by pressing the switch to the Enable Print position.

Note: When the printer is in the hold print condition for more than 10 minutes and the printer is not attached to a System/370 Model 138 or 148 as a console printer, **08** is displayed in the Status Indicators. The **08** code indicates a message was sent to the System Controlling Unit, from the 3287 Printer, signaling the printer is not operational.

When the printer is attached to a System/370 Model 138 or 148 as a console printer, a message is sent to the System/370 immediately after the Hold Print switch is pressed, signaling the System/370 that the printer is not operational. No message is displayed at the 3287 printer.

Caution: To prevent unexpected print head movement when power is on the 3287, press the Hold Print switch before attempting any of the following:

- Loading or adjusting paper forms or roll paper
- Installing or removing the Variable Width Forms Tractor or Friction Feed Paper Handling device
- Removing or installing the platen
- Opening covers

Enable Print Switch

When you press the Enable Print switch, the following occurs:

- The Hold Print light goes off.
- The Ready light comes on.
- Printing is resumed (when conditions permit), following the previously printed position.
- The switches that became operative in the hold print condition (unshaded area above) now become inoperative.

Note: If the Printer was in a non-print condition when the Hold Print switch was pressed, when the Printer is enabled, the Print head moves to the 1st Print position on the 3287.

Change LPI Switch

This switch is operational only while your printer is in the hold print condition, indicated by the Hold Print light being on. (Press the Hold Print switch to put your printer in this condition.)

The Change LPI switch allows you to set your printer for printing eight lines or six lines per 25.4 mm (1 inch). The 8 LPI light is on when your printer is set to print eight lines per inch and off for six lines per inch. Press the Change LPI switch each time you wish to change from one to the other. When your printer is first turned on (the Power switch is set to ON) your printer is automatically set to 6 lines per inch (LPI).

When the Double Space light is on, the printer spaces a blank line between each line of print. When the Double Space condition is active a setting of 6 LPI actually prints 3 lines per inch and a setting of 8 LPI actually prints 4 lines per inch. The following illustration shows the four possible combinations of print spacing.

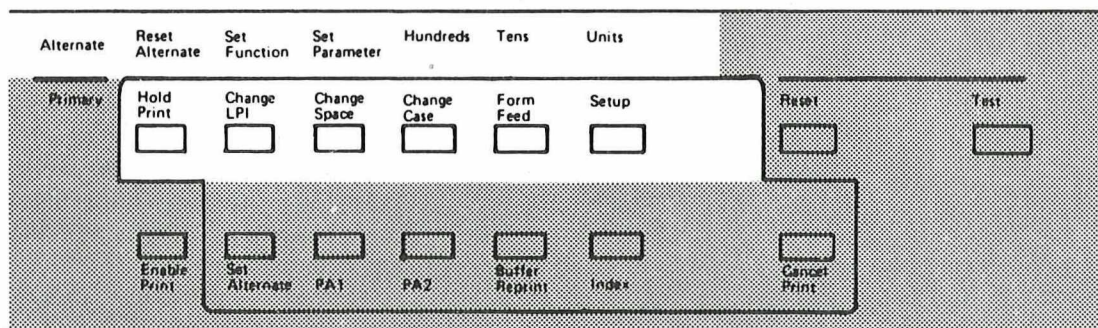
Note: When your printer is operating in SCS mode (indicated by the Ready light blinking while your printer is in the hold print condition), the LPI setting is controlled by the System Controlling Unit. If the LPI setting is not specified by the SCU, the 3287 will print 6 lines per inch (LPI). The Change LPI can be pressed, but will have no effect at this time.

With these lights on:	Your printer prints:
Ready CU Signal Check Test Hold Print 8LPI Double Space Dual Case (Status Indicator)	8 lines of print per inch
Ready CU Signal Check Test Hold Print 8LPI Double Space Dual Case (Status Indicator)	4 lines of print per inch
Ready CU Signal Check Test Hold Print 8LPI Double Space Dual Case (Status Indicator)	6 lines of print per inch
Ready CU Signal Check Test Hold Print 8LPI Double Space Dual Case (Status Indicator)	3 lines of print per inch

Set Alternate Switch

This switch is operational only while your printer is in the hold print condition, indicated by the Hold Print light being on. (*Press the Hold Print switch to put your printer in this condition.*)

When you press the Set Alternate switch, the Hold Print light blinks on and off and some of the switches on the printer take on an alternate use. These switches, and their alternate uses, are shown following (in the unshaded areas).



While your printer is in the alternate operation condition, you can use the switches in the unshaded area to specify how many print positions you want to print on a print line. (For more details, refer to "Setting the Maximum Print Position", in Chapter 3.)

Note: The Set Function switch is reserved and is not for operator use.

Change Space Switch

This switch is operational only while your printer is in the hold print condition, indicated by the Hold Print light being on. (*Press the Hold Print switch to put your printer in this condition.*)

The Change Space switch allows you to set your printer for single or double spacing between the print lines, as follows:

00000	00000	00000	} single spacing
00000	00000	00000	
00000	00000	00000	

00000	00000	00000	} double spacing
00000	00000	00000	
00000	00000	00000	

The Double Space light operates in combination with the Change Space switch. It is on when your printer is set to double space, and off for single space. Press the Change Space switch each time you wish to change the spacing from double to single, or the reverse. (When your printer is first turned on, the printer is automatically set to single space.)

PA1 Switch

This switch is operational only when the following conditions are present:

1. *Your printer has the SCS Support feature installed.*
2. Your printer is in the hold print condition, indicated by the Hold Print light being on. (Press the Hold Print switch to put your printer in this condition.)
3. *Your printer is operating in SCS mode; this is indicated by the Ready light blinking.*

When you press the PA (Program Attention) 1 switch, the following takes place:

1.

6	1
---	---

 is displayed on the Status Indicator (this may occur only momentarily).
2. Your printer sends a signal to the host to start a program (which has been written and put into the host by your programming personnel). When the program is started, blank

--	--

 is displayed in the Status Indicators.
3. If you press the PA1 switch when the printer is not operating in SCS mode, the message

0	9
---	---

 is displayed to indicate an invalid switch operation.
4. If you press the PA1 switch on a printer that does not have the 3274/3276 Attachment feature, the PA1 switch is ignored (there is no response from the printer).

Change Case Switch

This switch is operational only while your printer is in the hold print condition, indicated by the Hold Print light being on. (Press the Hold Print switch to put your printer in this condition.)

The Change Case switch allows you to set your printer to print all of the alphabetic characters in Mono Case (uppercase all capital letters) or in Dual Case (upper and lowercase).

The Dual Case light operates in combination with the Change Case switch. It is on when your printer is set to print upper and lowercase characters (dual case) and off for printing only uppercase letters. Press the Change Case switch each time you wish to change from one case to the other. (When your printer is first turned on, the printer is automatically set to Mono Case.)

Notes:

1. The System Controlling Unit can override this switch setting during printing.
2. When the 3287 is operating with the 3271/3272 Attachment feature, ASCII-B and KATAKANA character sets are Mono Case only and Data Analysis APL is Dual Case only. The Change Case switch has no effect.
3. This switch is not active when in SCS mode. SCS operates only in Dual Case.

PA2 Switch

This switch is operational only when the following conditions are present:

1. *Your printer has the SCS Support feature installed.*
2. Your printer is in the hold print condition, indicated by the Hold Print light being on. (Press the Hold Print switch to put your printer in this condition.)
3. *Your printer is operating in SCS mode; this is indicated by the Ready light blinking.*

When you press the PA (Program Attention) 2 switch, the following takes place:

1.

6	2
---	---

 is displayed on the Status Indicator (this may occur only momentarily).
2. Your printer sends a signal to the host to start a program (which has been written and put into the host by your programming personnel). When the program is started blank

--	--

 is displayed in the Status Indicators.
3. If you press the PA2 switch when the printer is not operating in SCS mode, message

0	9
---	---

 is displayed to indicate an invalid switch operation.
4. If you press the PA2 switch on a printer that does not have the 3274/3276 Attachment feature, the PA2 switch is ignored (there is no response from the printer).

Form Feed Switch

This switch is operational only when both of the following conditions are present:

1. *Your printer has either the Page Length Control feature, or the SCS Support feature installed.*
2. Your printer is in the hold print condition, indicated by the Hold Print light being on (Press the Hold Print switch to put your printer in this condition.)

When you press the Form Feed switch, the printer advances the paper forms until the first print line of the next page is reached, provided the Selector Switches have been properly set. *If your printer is operating in SCS mode (indicated by the Ready light blinking while the 3287 is in the hold print condition), the forms advance only as specified by the System Controlling Unit.*

Buffer Reprint Switch

This switch is operational only when both of the following conditions are present:

1. Your printer has the 3274/3276 Attachment feature installed.
2. Your printer is in the hold print condition, indicated by the Hold Print light being on. (Press the Hold Print switch to put your printer in this condition.)

Pressing the Buffer Reprint switch (under certain conditions) causes your printer to reprint all of the data stored in your printer's buffer. (The buffer is a storage area in your printer that temporarily stores data that is to be printed.) For more details, refer to "Buffer Reprint", in Chapter 3.

Note: The Buffer Reprint is not active in SCS mode.

Setup Switch

This switch is operational only while your printer is in the "Hold Print" condition, indicated by the Hold Print light being on. (Press the Hold Print switch to put your printer in this condition.)

When you press the setup switch, and "H" is printed in print position 1. If you press and hold the setup switch, "Hs" will be printed across the paper until the MPP is reached (see Chapter 3, "Setting the Maximum Print Position"), or the alternate print position (if you have set one in your printer).

Index Switch

This switch is operational only while your printer is in the "Hold Print" condition, indicated by the Hold Print light being on. (Press the Hold Print switch to put your printer in this condition).

When you press the Index switch, the paper in the printer is advanced one line. If you press and hold the Index switch, the paper will be advanced continuously.

Reset Switch

Pressing the Reset switch allows you to recover from certain error conditions. This switch, which is operational only when the Check light is on, causes the Check light to go off and removes certain printer error conditions.

Cancel Print Switch

This switch is operational only when both of the following conditions are present:

1. Your printer is in the "Hold Print" condition, indicated by the Hold Print light being on. (*Press the Hold Print switch to put your printer in this condition.*)
2. *Your printer has the SCS Support feature installed and is processing data in SCS mode, indicated by the Ready light blinking while the 3287 is in the hold print condition.*

If you press the Cancel Print switch under the above conditions, **5 9** is displayed on the Status Indicator and printing stops. Blank is displayed in the Status indicators and printing is resumed when the control unit sends another message.

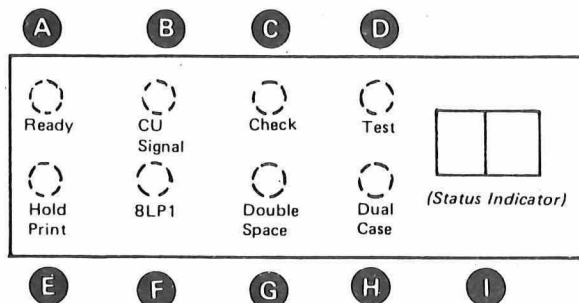
If you press the Cancel Print switch when the printer is not operating in SCS mode, **0 9** is displayed, indicating an error.

Test Switch

When you press the Test switch, the printer runs self-checking tests and prints a "test printout" (an example of the test printout can be seen in the "Samples" section of the *IBM 3287 Printer Models 1 and 2 Problem Determination Guide*).

Before running this test, be sure you have a sufficient amount of paper in the printer. Use paper that is at least 203.2 mm (8 inches) wide and at least 1.8 meters (6 feet) long.

9 Lights/Status Indicator



Note: If you have any problems with the lights on the 3287 Printer, refer to "Operator Light Problems" in the *IBM 3287 Printer Models 1 and 2 Problem Determination Guide* for the action you should take.

A Ready Light

The Ready light is on when your printer is ready to print data that is sent to it by the SCU. The Ready light goes off when any of the following conditions is active:

- The Power switch is set to off.
- The Test light is on.
- The Hold Print light is on (*if your printer is operating in SCS mode, the Ready light blinks at this time*).
- The Check light is on.
- The printer runs out of paper.

B CU Signal Light

The CU Signal light is on when your printer is connected to the System Controlling Unit and communication can take place. It goes off when there is no signal from the SCU for 30 seconds or when the printer is in test mode.

C Check Light

The Check light, when on, indicates that there is a problem. The number displayed on the Status Indicator shows the type of problem. (Go to the "Status Indicator" section of the *IBM 3827 Printer Models 1 and 2 Problem Determination Guide* and follow the directions for the number of characters being displayed.)

D Test Light

The Test light, when on, indicates that an automatic built-in printer test is running.

E Hold Print Light

- | | |
|---------------------|---|
| On | — The Hold Print light, when on continuously, indicates that the printer is in the hold print condition (printing cannot take place). This light comes on and stays on when the Hold Print switch is pressed. |
| Off | — The Hold Print light, when off, indicates that the printer is in the enable print condition (printing can take place). This light goes off and remains off when the Enable Print switch is pressed, except under certain error conditions. |
| Blinking On and Off | — The Hold Print light, when blinking, indicates that your printer is in the alternate operation condition. While the printer is in the alternate operation condition, you can select the number of print positions you wish your printer to print across the page. The printer enters this condition when first the Hold Print switch is pressed, then the Set Alternate switch is pressed. (For details on selecting the number of print positions, refer to "Setting the Maximum Print Position", in Chapter 3.) |

F 8 LPI Light

The 8 LPI light comes on when the Change LPI switch is pressed and the printer was operating at 6 LPI.

The 8 LPI light, when on, indicates that eight lines of characters per inch can be printed. (If the Double Space light is also on, four lines of characters per inch can be printed.) The 8 LPI light comes on when the Change LPI switch is pressed.

The 8 LPI light, when off, indicates that six lines of characters per inch can be printed. (If the Double Space light is on, three lines of characters can be printed.)

Note: If your printer is operating in SCS mode, indicated by the Ready light blinking while the 3287 is in the hold print condition, the System Controlling Unit controls whether your printer prints six or eight lines per inch. The setting that you have specified may be overridden.

Double Space Light

The Double Space light, when on, indicates that printing will be double-spaced. If the 8 LPI light is also on at this time, your printer will print four lines of characters per inch. If the 8 LPI light is not on, your printer will print three lines of characters per inch. The Double Space light comes on when you press the Change Space switch; the light goes off when you press the switch a second time. (For more information refer to the description of the Change Space switch).

Dual Case Light

The Dual Case light, when on, indicates that your printer will print in uppercase and lowercase alphabetic characters.

The Dual Case light, when off, indicates that your printer will print alphabetic characters in uppercase (capital letters) only. This light comes on when you press the Change Case switch and the printer was operating in single case mode; it goes off when you press the switch a second time. (For more information refer to the description of the Change Case switch.)

Status Indicator

The Status Indicator is normally blank; under certain conditions it shows a two-digit status code. The length of time the two-digit code is displayed varies, depending upon the type of condition the 3287 is in at that time. For details of these status codes, refer to the "Status Indicator" section of the *IBM 3287 Printer Models 1 and 2 Problem Determination Guide*.

Note: The Status Indicator blinks on and off when Set Alternate mode is selected and the hundreds switch has been pressed.

Mode Status of the IBM 3287 Printer Switches

<i>Switch</i>	<i>Meaning when Power is turned on</i>	<i>Is the switch active in Non-SCS?</i>	<i>Is the switch active in SCS?/Default?</i>
Hold Print	Enable Print	Yes	Yes
Enable Print	Enable Print	Yes	Yes
Change LPI	6 LPI	Yes	Never/6 LPI, System Controlling Unit can change LPI value.
Set Alternate (for MPP setting)	MPP = 132	Yes	Never/MPP=132, System Controlling Unit can change MPP value from 1 to 132.
Change Space	Single Space	Yes	Never/Single Space
PA 1 (Note 2)	Never Active	Never Active	Becomes Active when switch is used
PA 2 (Note 2)	Never Active	Never Active	Becomes Active when switch is used
Form Feed (Note 2)	Becomes Active when used	Becomes Active when used, Selector Switch setting is read.	Becomes Active when used, Selector Switch setting specified by the System Controlling Unit is read.
Selector Switches	Present Setting is read	The switches are active and are read when Form Feed is pressed.	Never/Defaults to 1 line regardless of previous operation and is set by the System Controlling Unit.
Change Case	Mono Case (unless the feature in Note 1 is installed).	Yes, if Special Feature is not installed	Never/always Dual Case
Buffer Reprint (Note 2)	Becomes Active After Printing	Becomes Active when used, (for reprint)	Never Active
Setup (Note 2)	Becomes Active when used	Becomes Active when used	Becomes Active when used
Index (Note 2)	Becomes Active when used	Becomes Active when used	Becomes Active when used
Reset	Becomes Active when used	Becomes Active when used	Becomes Active when used
Cancel Print (Note 2)	Never Active	Never Active	Becomes Active when used
Test	Becomes Active when used	Becomes Active when used	Becomes Active when used

Note 1: When the 3287 Printer is operating with the 3271/3272 Attachment Feature, ASCII-B and KATAKANA character sets are Mono Case only and APL is Dual Case only. When the 3287 Printer is operating with the 3274/3276 Attachment Feature, the Change Case switch defaults to Mono Case when power is turned on.

Note 2: You must press the Hold Print switch to make this switch active.

Chapter 3. Operating the Printer

Important Points to Keep in Mind When You Use the Printer

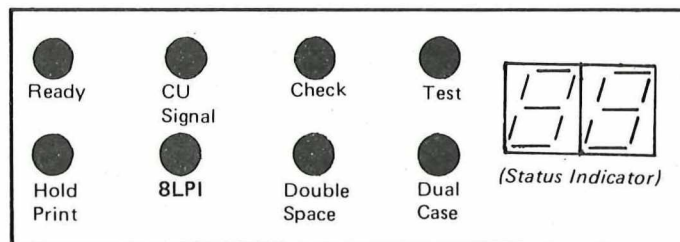
1. Keep all covers closed except when you change the ribbon or load paper into the printer.
2. Always *press the Hold Print switch* before turning power off.
3. Always turn power off to replace the ribbon or to remove the platen.
4. Do not drop anything into the printer; keep fingers, hair, etc., out of the printing area.
5. Do not spill any liquids into the printer.
6. Be sure the air vents at the left rear and right rear are not obstructed. Obstructions could restrict air flow through the printer and cause overheating of the unit.
7. Do not allow the printer to print at or beyond the perforations or the edge of the forms on either side. Such printing could damage the print wires in the print head.
8. If the printer does not operate properly, refer to *IBM 3287 Printer Problem Determination Guide*.
9. The print registration may vary on the last paper form of a series of continuous forms.
10. Whenever there is no activity at the printer for 2 minutes, the print head automatically returns to the left side of the printer.

Caution: Use only a mild soap and water solution when you clean the printer covers; do not use harsh detergents or cleansers.

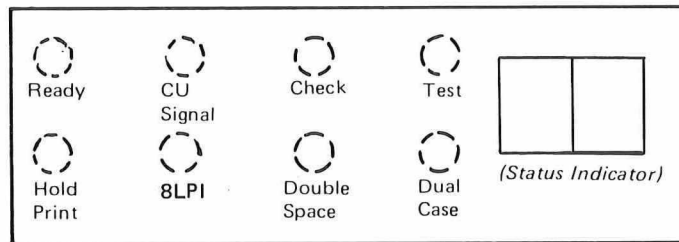
Power-On Procedure

To turn your printer on and prepare it for operation:

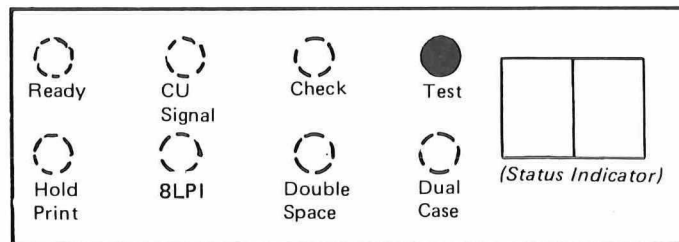
1. Set the Power switch to the Off position.
2. Plug the power cord into the power outlet.
3. Set the Power switch to the On position.
4. Observe the printer lights and Status Indicator, as shown, during the following automatic Power-On Test. The time required for the Power-On Test is approximately 30 seconds.
 - The Status Indicator displays 88, all of the lights come on for about 2 seconds and the Audible Alarm sounds for approximately 1 second.



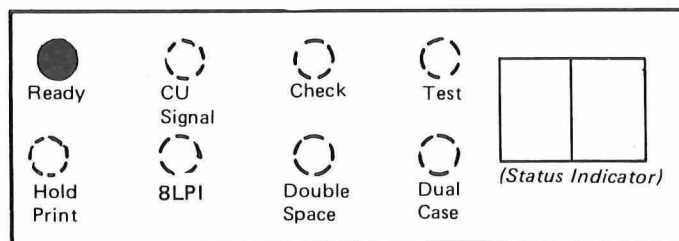
- The Status Indicator goes off (becomes blank), and all of the lights go off.



- The Test light comes on and remains on until the Power-On Test ends. Some of the other lights blink on and off.



- The print head moves to print position 1 and the Test light goes off. If paper forms are already loaded in the printer, the Ready light comes on, and normal print operations are possible. (If the audible alarm sounds and 01 is displayed on the Status Indicator after the preceding Power-On Test is completed, press the Hold Print switch, then load paper forms into the printer. Refer to the procedures for loading and adjusting paper forms, in Chapter 4.)
- The left margin is automatically set at print position 1, and the maximum print position is at position 132.



Operator Panel during Normal Operation

- The printer is automatically set for the following operation:
 - a. Printing in Mono Case (all capital letters)

Note: If your printer has the 3271/3272 Data Analysis APL feature, the printer is automatically set for Dual Case.
 - b. Single spacing between the lines of print
 - c. Six lines of printing per inch
- 5. After the printer has been loaded and the paper forms have been adjusted, the Ready light comes on, and normal operations are possible. (Refer to "Operating the Printer", in this chapter.)

6. If the lights do not appear as shown in the preceding Power-On Test, refer immediately to "Operator Light Problems", in the *IBM 3287 Printer Models 1 and 2 Problem Determination Guide (PDG)*. If the PDG does not lead to the problem, record the incorrect light indications on the *IBM 3287 Printer Models 1 and 2 Operator's Trouble Report* form, and call the 3287 Printer service representative. If you notice any unusual conditions, such as smoke, heat, or erratic machine operation:

- Set the Power switch to the Off position.
- Unplug the printer power cord from the power outlet.
- Remove the paper forms from the printer.
- Fill out the *IBM 3287 Printer Models 1 and 2 Operator's Trouble Report*.
- Call the 3287 Printer service representative.

Power-Off Procedure

To turn power off at your printer:

1. Press the Hold Print switch.
2. Set the Power switch to Off.

Operating the Printer

After the Power-On Test, after installing or adjusting paper forms in the printer, or when resuming print operations following an interruption of printing, the following conditions should be checked to ensure correct machine operation:

- The Ready light should be on.
- The Hold Print light should be off. If it is on, press the Enable Print switch.
- The form release lever should be positioned toward the front of the printer.
- The Change LPI switch, the Change Space switch, and the Change Case switch should be set according to your application.
- The Selector switches should be set to certain predetermined digits, according to your required application, if the Page Length Control feature is installed on the printer. (Refer to "Setting the Page Length", in this chapter.)
- The maximum number of print positions per horizontal print line should be set according to the size paper you are using and/or your application. (Refer to "Setting the Maximum Print Position", in this chapter.)

Note: When SCS mode is active, check the following:

- The Ready light should be on.
- The Hold Print light should be off. If it is on, press the Enable Print switch.
- The Form Release lever should be positioned toward the front of the printer.

Test Mode

The printer enters test mode either when the Power switch is set to the On position or when the Test switch is pressed. In test mode, the printer performs a built-in self-checking test that checks basic machine functions. Before you press the Test switch to enter test mode, be sure there is paper in the printer and that the paper is at least 1.8 meters (6 feet) long and 203 mm (8 in) wide, to provide enough space for the test to be printed out.

Setting the Maximum Print Position

Your 3287 Printer can print up to a maximum of 132 positions (characters and spaces) in a single print line. You can set the number of positions from 1 to 132, using the procedure that follows.

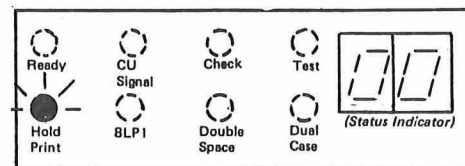
Note 1: When operating in SCS mode this setting is overridden by the System Controlling Unit.

Note 2: No format switch settings can be set in SCS Mode. SCS mode causes the printhead to move to print position 132 or a print position set by the System Controlling Unit.

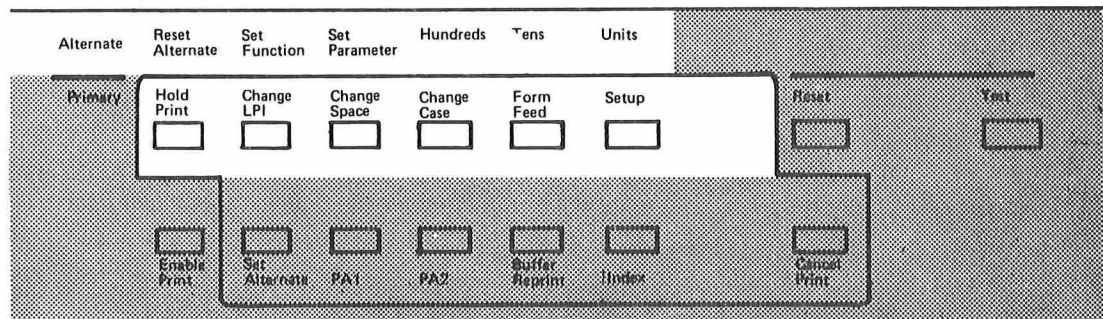
If you do not specify the maximum print position, using the following procedure, your printer automatically prints up to 132 positions. An example of the need to change the number of print positions is when narrow paper, such as 76 to 203mm (3 to 8 inches) is being used.

To set the maximum print position:

1. Press the **Hold Print** switch; the Hold Print light comes on.
2. Press the **Set Alternate** switch; the Hold Print light starts to blink, and **00** is displayed.



3. Enter the number of print positions you want the printer to print, using the **Hundreds**, **Tens**, and **Units** switches, as shown:



Units switch – Each time you press it, the status indicator is increased by 1 (up to a maximum value of 9).

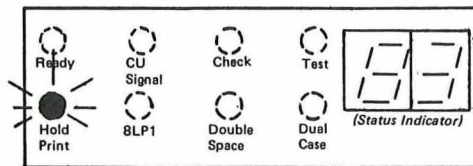
Tens switch – Each time you press it, the status indicator is increased by 10 (up to a maximum value of 90).

Hundreds switch – When you press this switch, the status indicator is increased by 100 (up to a maximum value of 100). The status indicator starts to blink, indicating that the number of print positions is 100 plus the number being displayed.

Note: If you continue to press either the Units, Tens, or Hundreds switch past its maximum value, it returns to a 0 value.

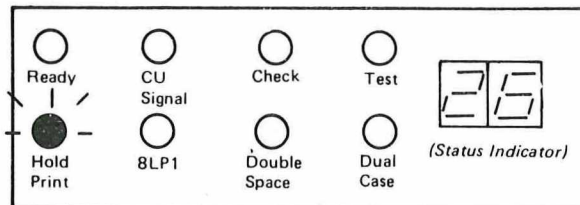
Example 1. You want the printer to print 83 positions.

- a. Press the Units switch three times.
- b. Press the Tens switch eight times.
- c. The status indicator shows 83.



Example 2. You want the printer to print 126 positions.

- a. Press the Units switch six times.
- b. Press the Tens switch two times.
- c. Press the Hundreds switch one time.
- d. The Status Indicator shows 26 (the 26 blinks to indicate that this is to be read as 126).



4. You can now take either one of the following two steps:

- (1.) Press the Set Parameter switch to set the number of print positions you have selected. Your printer has now been removed from the Alternate operations condition. It is now in the hold print condition (the Hold Print light is on continuously, and the switches return to their primary use).

Note 1: When you turn your printer off, then on again, the printer cancels the present print position setting and automatically returns to 132. However, any print position set by the system controlling unit takes precedence over the present setting.

Note 2: If data was already in the buffer before you set the new "maximum print position", that data is printed out in the number of print positions set prior to the number you have just set in the printer.

- (2.) Press the Reset Alternate switch (before pressing the Set Parameter switch) to cancel the number you have entered to define a new maximum print position (your printer returns to the print position number previously set). Pressing the Reset Alternate switch removes your printer from the alternate operation condition. Your printer goes to the hold print condition (the Hold Print light is on continuously and the switches return to their primary use).

5. Press the Enable Print switch.

Setting the Page Length

If your 3287 Printer has the Page Length Control feature, you can select the maximum number of lines that can be printed on a page. First, determine the maximum number of lines you want your printer to print on a page, then set the number of lines into your printer, using the following procedures.

Note: When your printer is operating in SCS mode (indicated by the Ready light blinking while your printer is in the Hold Print condition), the page length is specified by the system controlling unit and cannot be altered by setting the Selector Switches.

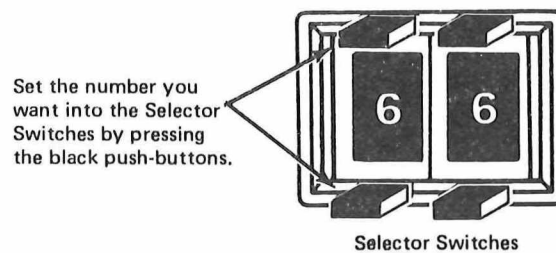
How to determine the correct number to set in the Selector Switches:

1. Measure the length of the paper form (example: 279.4 mm [11 inches]).
2. When specifying 8 LPI (lines per inch)
 - a. Multiply paper length by 8 for single spacing ($11 \times 8 = 88$).
 - b. Multiply paper length by 4 for double spacing ($11 \times 4 = 44$).
3. Set the Selector Switches to the number obtained after multiplying (example: 88 or 44), as determined in step 2.

Note: When specifying 6 LPI (lines per inch), rather than 8 LPI, multiply paper length by 6 for single spacing ($11 \times 6 = 66$); or multiply paper length by 3 for double spacing, ($11 \times 3 = 33$). Then set the Selector Switches to 66 or 33.

How to enter a new page length into your printer:

1. Set the Selector Switches to the number of print lines needed per page (from 00 to 99).



Steps 2 through 4 should be done only when the printer is not printing.

2. Press the Hold Print switch.
3. Press the Forms Feed switch.
4. Press the Enable Print switch.

The new page length is now read into your printer (this number is automatically read into your printer each time the printer's Power switch is turned on).

Note: If your printer is operating in SCS mode, the printer automatically advances the paper 1 line. However, any page length set by the System Controlling Unit, takes precedence in advancing the paper. At this time, the value set in the Selector Switches is stored for printing non-SCS data.

Buffer Reprint Operation

Under certain conditions you can reprint the data stored in your printer's buffer. (The buffer is a storage area in your printer that stores data that is to be printed.) All of the data in the buffer is printed out, starting at the beginning of the buffer.

The buffer reprint operation is possible only if both of the following conditions are present:

1. Your printer is in the hold print condition, indicated by the Hold Print light being on.
2. Your printer has the 3274/3276 Attachment installed and is not processing in SCS mode.

Note: If your printer is operating in SCS mode, your printer cannot reprint the buffer; instead, it requests that the System Controlling Unit retransmit the message for reprinting.

You can reprint all of the data in the buffer under the following two conditions:

1. If your printer runs out of paper while it is printing (is displayed on the Status Indicator if this happens), do the following:
 - a. Press the Hold Print switch; the Hold Print switch comes on. (If you do not press the Hold Print switch within 60 seconds after the printer runs out of paper, will be displayed in the Status Indicator, indicating that a message has been sent to the System Controlling unit to advise it that your printer is not operational.)
 - b. Put more paper (forms) in the printer.
 - c. Press the Buffer Reprint switch; is then displayed on the Status Indicator. (is displayed if the buffer reprint operation is not allowed; is displayed to indicate that you are operating in SCS mode and that a message has been sent to the System Controlling Unit).
 - d. Press the Enable Print switch. Printing restarts at the beginning of the buffer if a is displayed; when all of the data in the buffer has been printed, blank is displayed in the status indicator. (The Enable Print switch must be pressed within 10 minutes of pressing the Hold Print switch. If you do not, is displayed, indicating that a message has been sent to the System Controlling Unit.)
2. If the Hold Print switch is pressed while the printer is printing, you must do the following:
 - a. Press the Buffer Reprint switch; is then displayed on the Status Indicator (is displayed if the buffer reprint operation is not allowed; is displayed to indicate that you are operating in SCS mode and that a message has been sent to the System Controlling Unit.)
 - b. Press the Enable Print switch. Printing restarts at the beginning of the buffer if a is displayed; when all of the data in the buffer has been printed, blank is displayed in the status indicator. (The Enable Print switch must be pressed within 10 minutes of pressing the Hold Print switch. If you do not, is displayed, indicating that a message has been sent to the System Controlling Unit.)

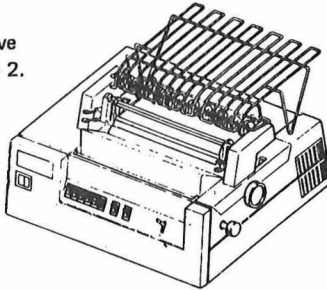
Replacing the Printer Ribbon (Stage 1 and Stage 2 Printers)

A brief description of the ribbon changing procedure is shown on the underside of the ribbon box, for quick reference. If you need detailed instructions, follow this procedure:

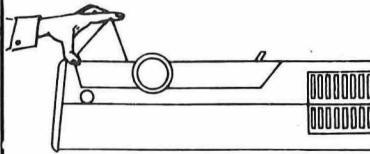
1. Press the Hold Print switch.
2. Set the Power switch to the Off position.
3. For access to the ribbon, refer to the correct series of pictures below for either a Stage 1 or Stage 2 Printer.

Stage 1 Printers

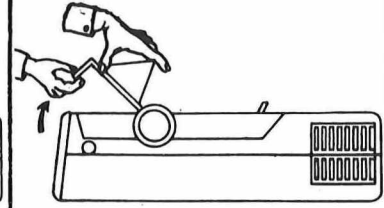
1. If your printer has the Variable Width Forms Tractor installed, remove it, then proceed to step 2.



2. Move the clear plastic canopy forward, then hold it against the top cover.

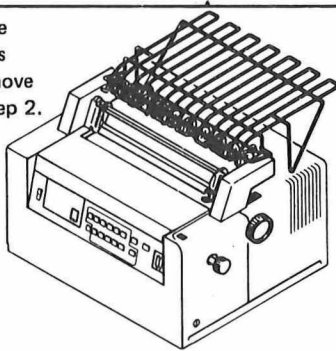


3. While holding the canopy, lift the top cover up and swing it toward the rear of the 3287 Printers.

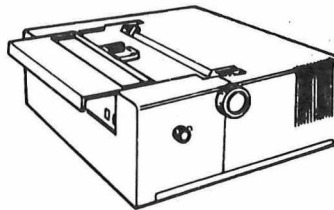


Stage 2 Printers

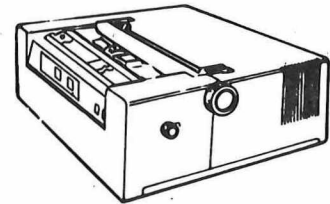
1. If your printer has the Variable Width Forms Tractor installed, remove it, then proceed to step 2.

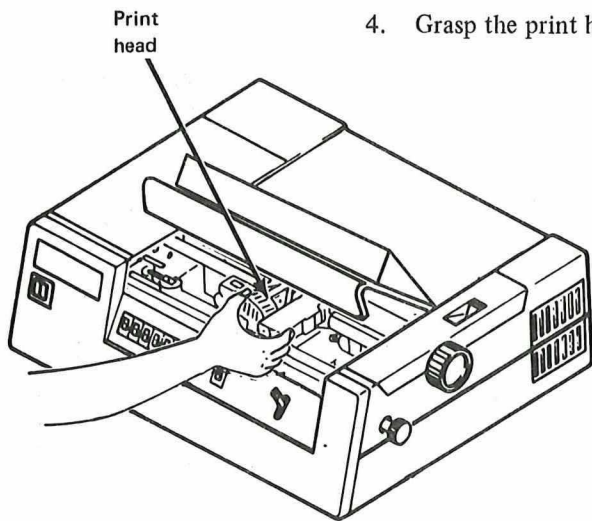


2. Move the Top Cover forward toward the front of the printer.



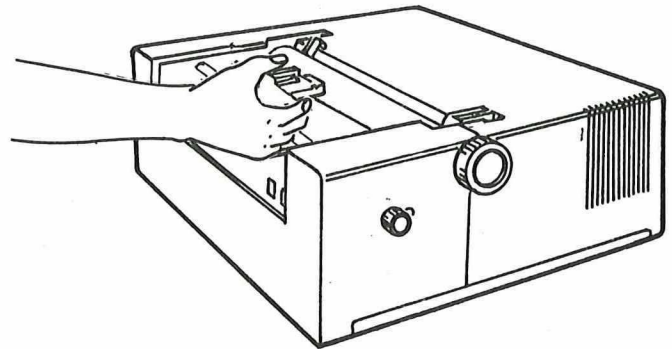
3. To remove the Top Cover, lift the cover up and remove the cover by pulling it to the front of the printer.





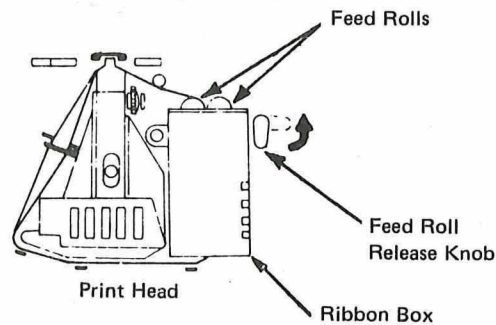
Stage 1 Printers

4. Grasp the print head with your hand and move it to about the center of the platen.



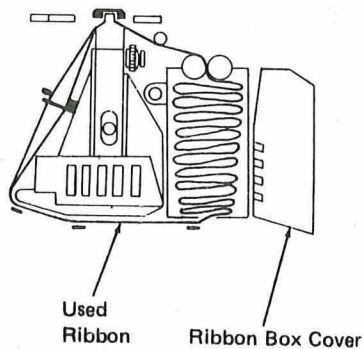
Stage 2 Printers

5. Rotate the feed roll release knob (on the print head) counterclockwise, one-quarter turn (this opens the feed rolls and releases the ribbon).

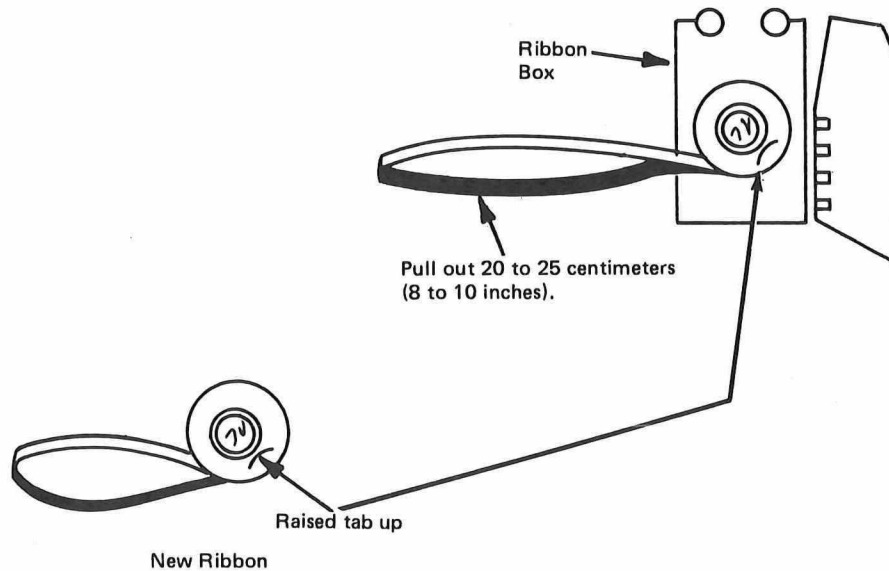


6. Put on the gloves supplied with the new ribbon.
7. Open the ribbon box cover.

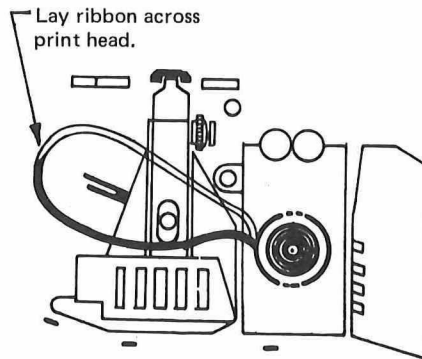
Caution: Never try to open the cover beyond its stop.



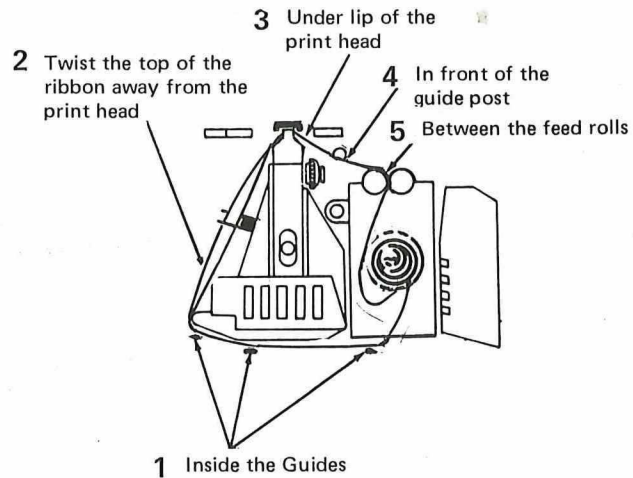
8. Remove the old ribbon and discard it.
9. Place the new ribbon in the ribbon box. Then grasp the looped end of the ribbon and pull out about 203 to 254 millimeters (8 to 10 inches) of ribbon.



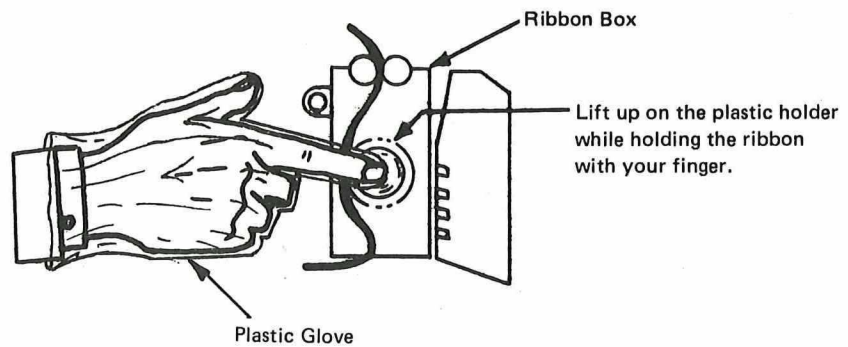
10. Lay the loop of ribbon that you pulled out in step 9, across the print head, as shown:



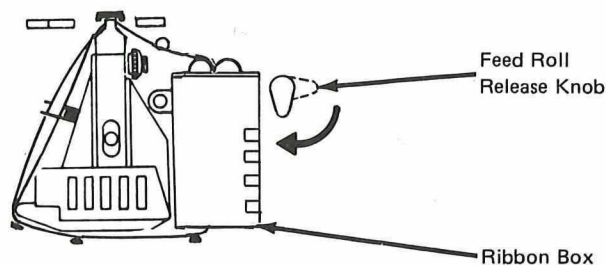
11. Grasp the loop of ribbon and thread it on the print head, as shown in the following illustration (from 1 to 5):



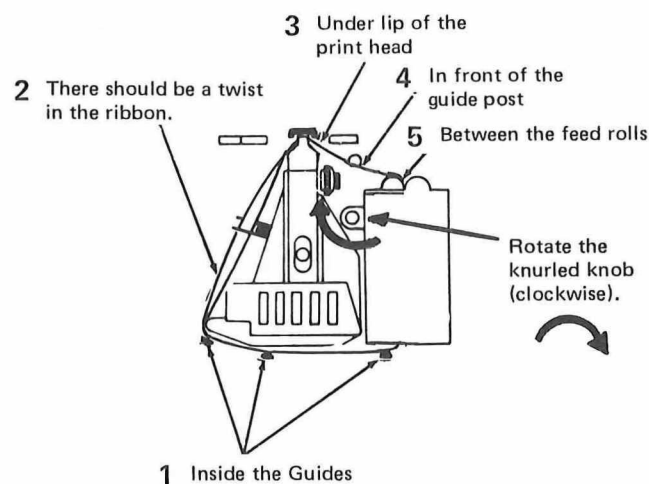
12. Remove the plastic holder enclosing the new ribbon that is now in the ribbon box. Put your finger through the hole in the plastic holder and hold the ribbon. While holding down the ribbon, lift up on the plastic holder (discard the plastic holder after you remove it).



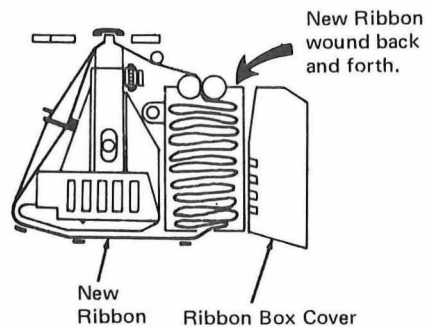
13. Close the ribbon box cover and rotate the ribbon feed roll release knob (clockwise) back to the original position



14. Rotate the knurled knob (clockwise) to remove any slack from the ribbon. While you are turning the knob, see that the ribbon is feeding smoothly and that it is threaded, as shown:



15. Grasp the print head and move it left to right and right to left, 15 to 20 times. (This moving motion of the print head drives the ribbon drive rolls and unwinds the new ribbon that is still partially wound in the ribbon box.) Raise the ribbon box cover and observe the new ribbon wound back and forth in the box. Close the ribbon box cover.

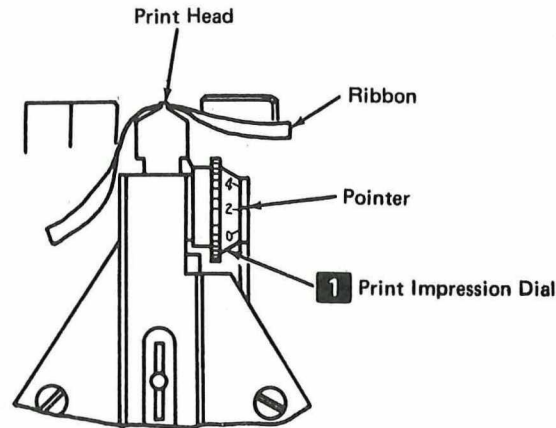


16. While holding the plastic canopy, close the top cover of the printer.

Adjusting the Print Impression

The print head moves toward the platen as the print impression dial **1** is turned toward "0". The scale should be adjusted according to the thickness of the forms. A guide for setting the dial is as follows:

1. Press the Hold Print switch.
2. The starting point for single-part forms is low on the scale; the starting point for multipart forms is high on the scale.



3. If the ribbon smudges the first sheet, rotate the print impression dial toward "8", one step at a time, until the smudging stops.
4. If the last copy is not legible, turn the print impression dial toward "0", one step at a time, until the printing becomes legible.

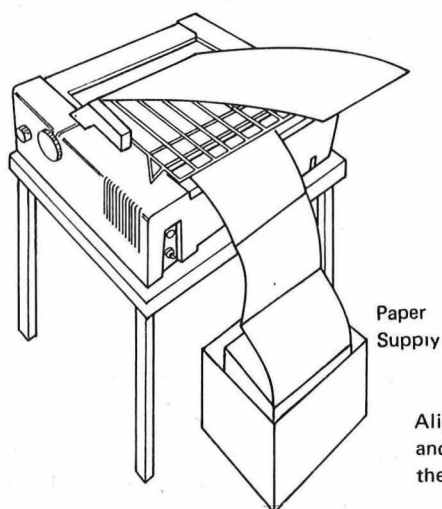
Chapter 4. Loading and Adjusting Paper

Loading Paper Forms With the Variable Width Forms Tractor

1. Press the Hold Print switch and align the stack of paper forms as shown in the following illustration.

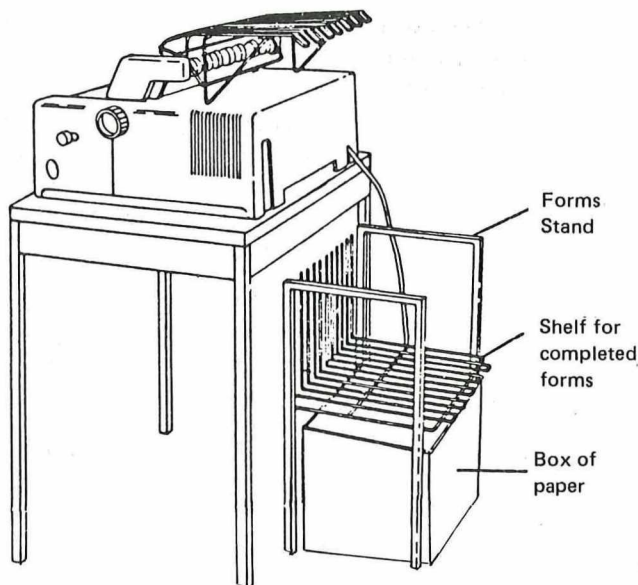
Caution: Position the paper forms supply to feed evenly up and into the printer. Ensure that the printed paper forms coming out of the printer do not drop down onto the paper forms that are being fed up into the printer. Do not block the printer air vents.

When it is necessary for an operator to leave an operating printer for any period of time, the operator should occasionally check the operation of the printer to ensure there are no problems with printer feeding and stacking of paper.

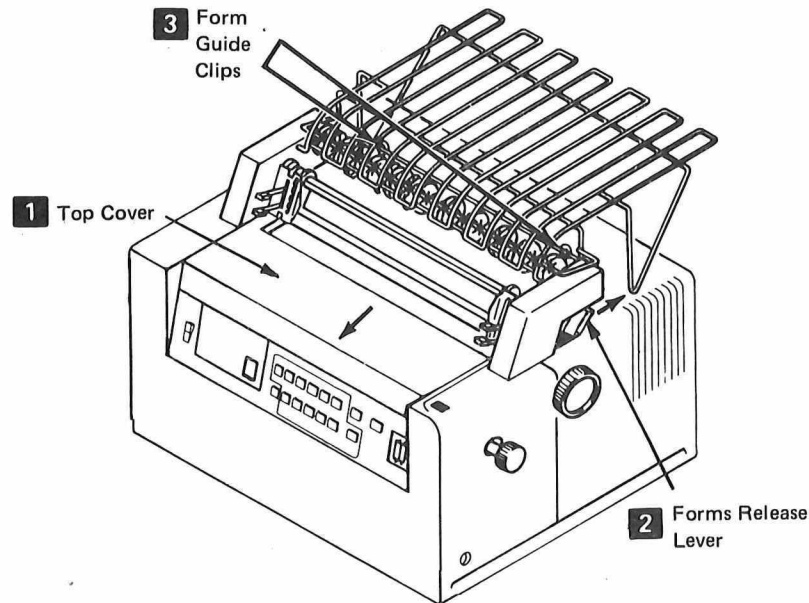


Align the forms supply directly below, and in line with, the paper path into the printer.

Note: If a form stand is available at your location, the stand can be used to assist in handling the continuous fanfold forms used in the 3287 Printer.



2. Press the Hold Print switch.
- 3a. **Stage 1 Printers:** Pull the clear plastic canopy up and toward the front of the printer.
- 3b. **Stage 2 Printers:** Slide the top cover (see **1**) toward the front of the printer.
4. Move the form release lever (see **2**) toward the rear of the printer.
5. Slide the forms guide clips (see **3**) to either side of the form guide rack (if you are loading paper that has a different width from the paper previously used).

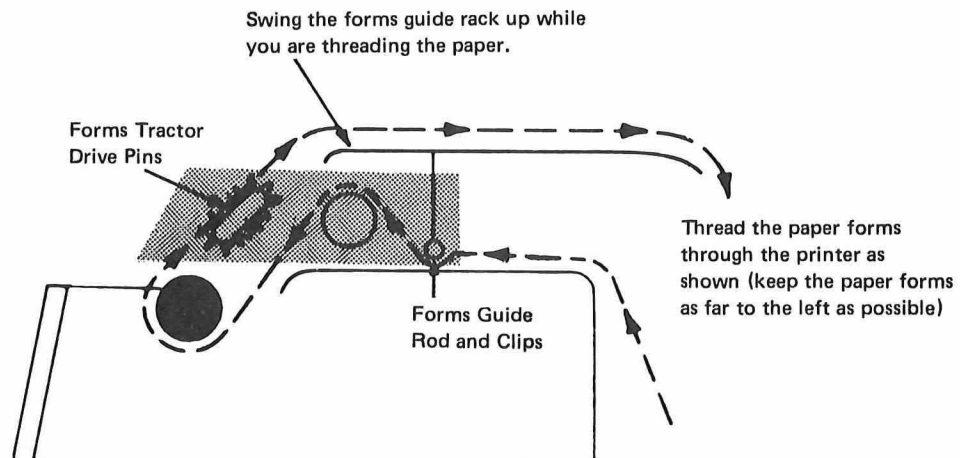


Note: When you insert the paper forms in the following steps, the forms path depends upon the type of paper forms being used.

The paper forms coming up out of the paper supply box should not drag on the sides of the box. (If you continue having problems with the paper feeding out of the box, remove the paper from the box.)

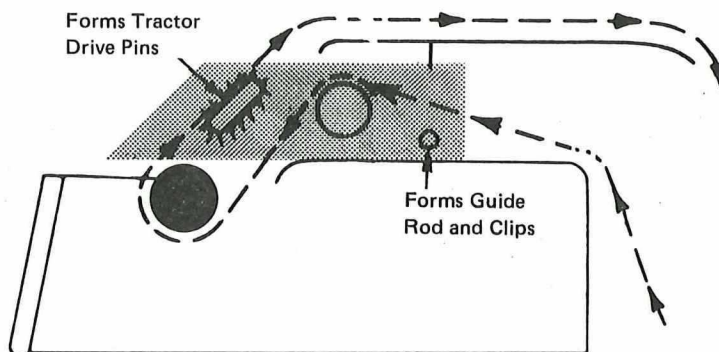
6. Insert the paper forms as follows:
 - a. **Single or Multi-Part Wide Form Paper (Recommended Procedure)**

The following procedure is recommended to insert the paper form through the printer and forms tractor (the shaded areas in the illustrations indicate the forms tractor path).



b. Single or Multi-Part Wide Form Paper (Alternate Procedure)

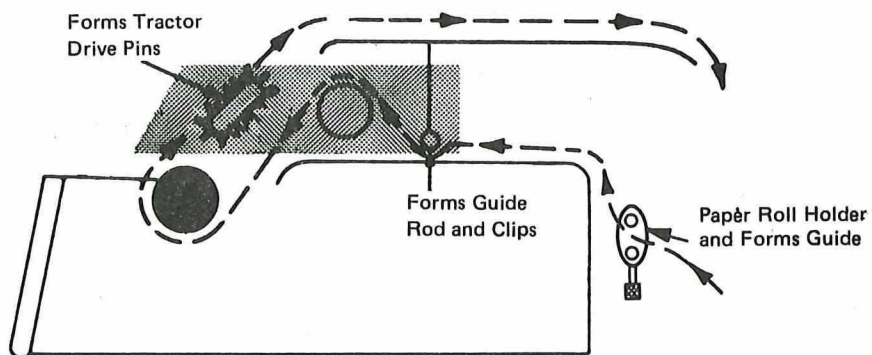
If the printer is having form feeding problems after using the paper loading procedure in step 6a, insert the paper forms through the printer as shown in this alternate procedure.



c. Single or Multi-Part Narrow Form Paper (Recommended Procedure)

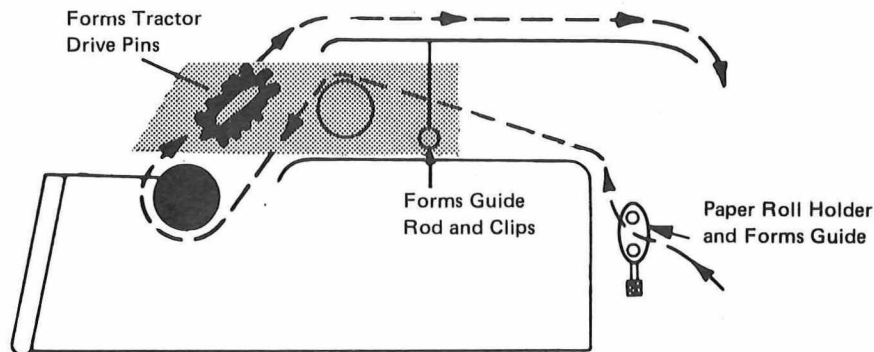
Thread the paper forms through the printer as shown.

Note: Narrow form paper is 76 to 203 millimeters (3 to 8 inches) wide.



d. Single or Multi-Part Narrow Form Paper (Alternate Procedure)

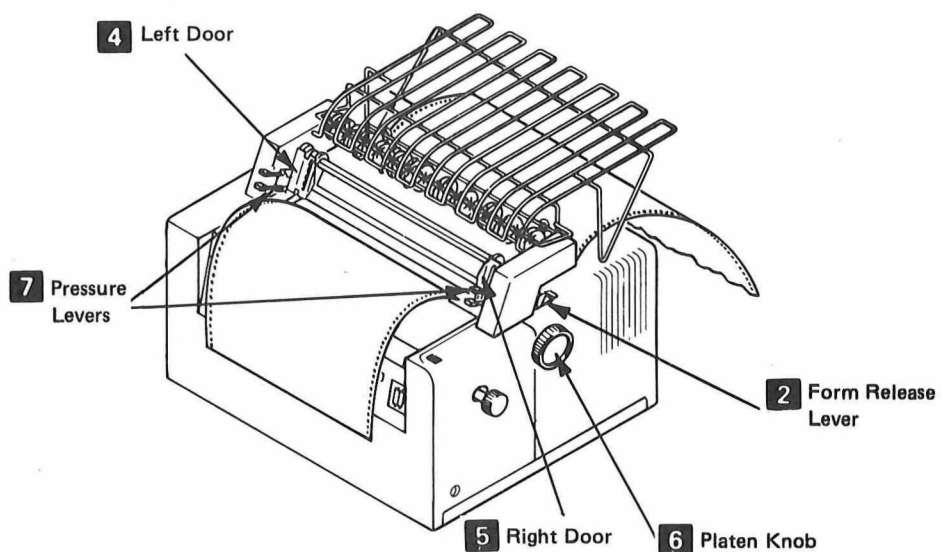
If the printer is having form feeding problems after the paper loading procedure in step 6c, insert the paper forms through the printer as shown in this alternate procedure.



Note: Narrow form paper is 76 to 203 millimeters (3 to 8 inches) wide.

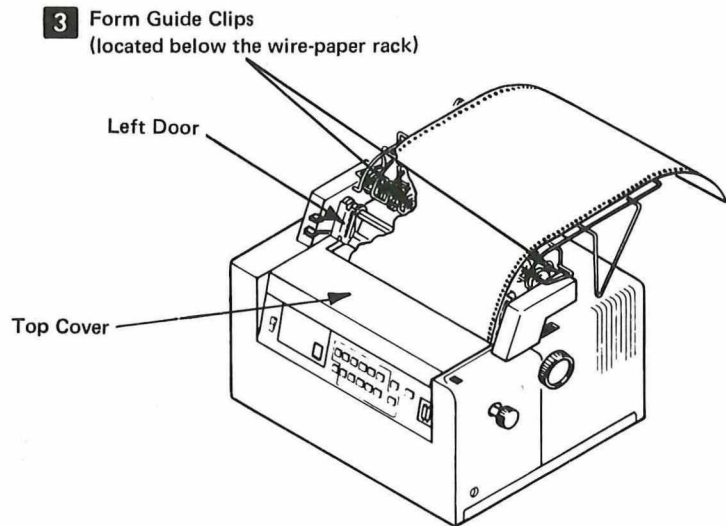
7. Attach the paper forms to the forms tractor, as follows:
 - a. Open the tractor doors (see **4** and **5**) that cover the drive pins, on each side of the forms tractor.
 - b. Turn the platen knob (see **6**) to advance the paper forms around the platen, and up, until the punched holes in the paper are aligned with the tractor pins.
 - c. Hold the paper form in one hand, then move the form release lever (see **2**) toward the front of the printer.
 - d. Align the holes on the paper forms over the pins on the tractors, then close the tractor doors (**4** and **5**).

Note: It may be necessary to reposition the paper forms slightly to the left or right. Squeeze the pressure levers **7** on the tractor drive assemblies and move the paper form to the proper position. The paper should have a slight bow between the left and right form tractors, so that the holes in the form do not tear.



8. Slide the forms guide clips (see **3**) over, so that they just touch the paper form.

Note: The position of the forms guide clips is very important for proper paper forms feeding. While you lift and lower the forms guide rack, observe the clearance and alignment between the paper forms and the forms guide clips. To avoid skewing, tearing, enlarging the margin-punched feed holes, or uneven feeding of the paper forms, ensure that the paper forms path is parallel, and even with, the tractor drive assemblies. To obtain this condition, adjust the form guide clips or reposition the paper forms supply, located behind the printer.



- 9a. Stage 1 Printers: Slide the clear plastic canopy toward the rear of the printer.
- 9b. Stage 2 Printers: Replace the top cover and slide toward the rear of the printer.
10. If printing adjustment is required, refer to "Adjusting Forms with the Variable Width Forms Tractor", in this chapter. If printing adjustment is not required, press the Form Feed switch, then press the Enable Print switch.

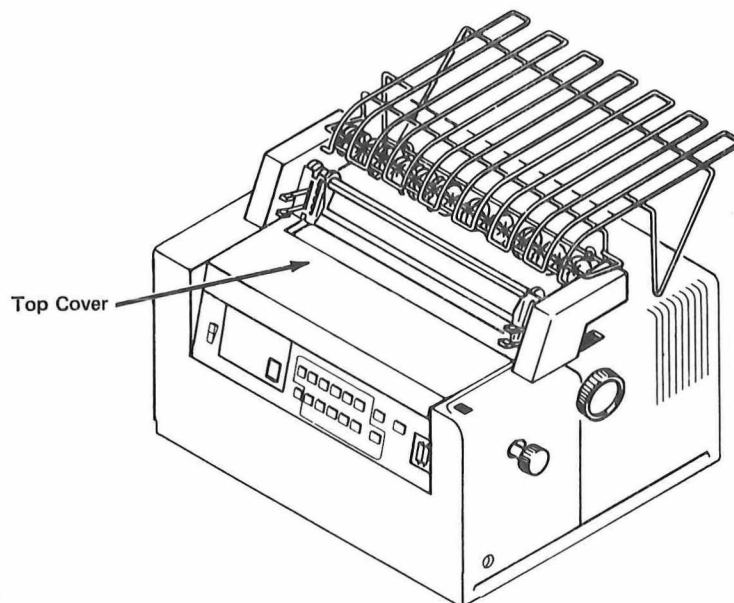
Note: After installing and adjusting the paper forms, and after starting printing operations, you should observe the alignment and positioning of the paper forms as they feed into the printer. Check the margin-punched feed holes in the paper forms to ensure that they are not tearing and that they are not being enlarged.

Some additional adjustment of the form guide clips, the tractor assembly, and the positioning of the paper forms supply (located behind the printer) may be required.

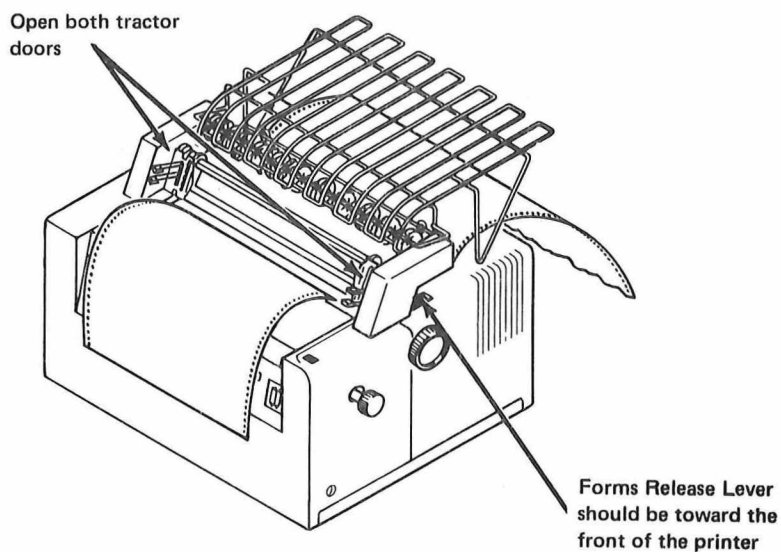
Adjusting Paper Forms—For Printers With the Variable Width Forms Tractor Installed

If your printer is having trouble feeding correctly, if the paper forms are skewing, or if the holes in the forms are tearing or being enlarged, use the following procedure:

1. Press the Hold Print switch to stop the printing operation. The Hold Print light comes on.
- 2a. (Stage 1 Printers) Pull the clear plastic canopy up and toward the front of the printer.
- 2b. (Stage 2 Printers) Slide the top cover toward the front of the printer.

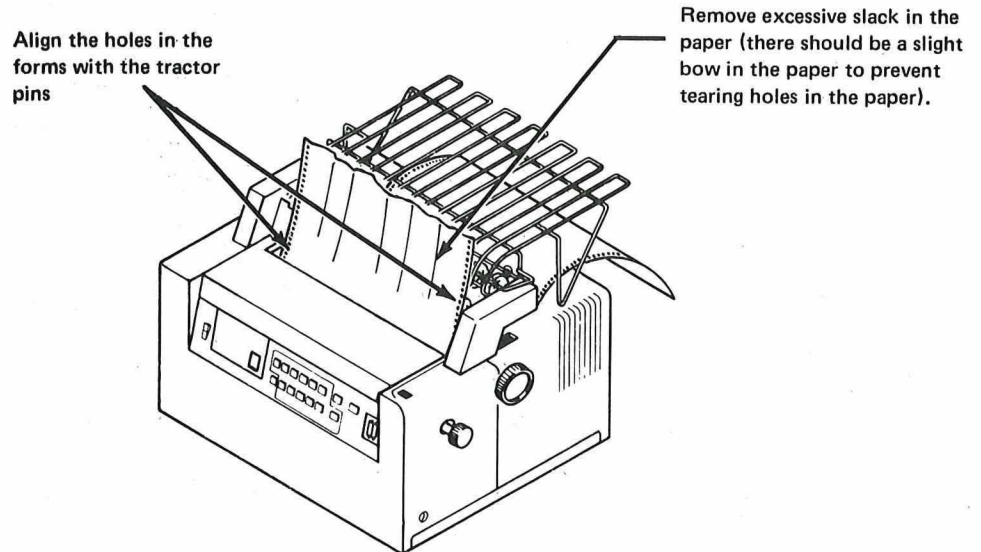


3. Open the two tractor doors and make sure the forms release lever is set toward the front of the printer.

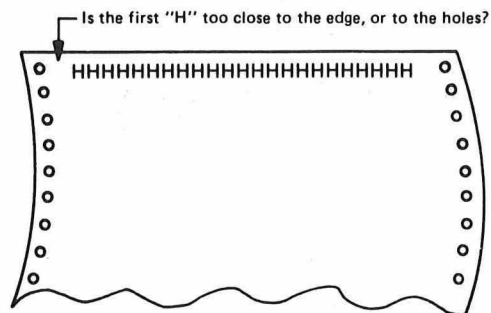


4. Align the holes in both margins of the form over the pins of the left and right tractors, so that the holes in the paper forms properly engage in the left and right tractor drive pins; then close both of the tractor doors.

Note: If there is much slack in the paper, where it passes between the two tractors, remove the slack by moving one of the tractors. (To move a tractor, simply squeeze the two levers on the tractor; this releases it and allows you to reposition it.)



- 5a. (Stage 1 Printers) Move the clear plastic canopy (that you pulled forward in step 2a) back, toward the tractors.
- 5b. (Stage 2 Printers) Slide the top cover (that you pulled forward in step 2b) toward the rear of the printer.
6. Rotate the platen knob clockwise (toward the rear of the printer) until the first print line is located below the perforation at the top of the sheet to be printed on.
7. Press (and hold) the Setup switch. The letter "H" is then printed across the paper, beginning at print position 1, until print position 132 is reached. For each line of "Hs", you must manually advance the paper or momentarily press the Index switch to advance the paper to the next print line.
8. Determine if you need to vertically align your paper forms by looking at the line of "Hs" that just printed. If the "Hs" have printed on the paper form perforations, align the punched holes in the paper form over the tractor pins so that the row of "Hs" prints below the perforations at the top of the form.



9. Determine if you need to make a horizontal adjustment to your printer by looking at the line of "Hs" that just printed. Is the first "H" printed too close to the left side of the paper (or too close to the holes in the paper)?

If you feel that the first "H" is not too close to the left side of the paper, you can bypass the horizontal fine adjustment and go to step 10.

Note: Horizontal fine adjustment is usually required if a different form is inserted into the printer, or if the Variable Width Forms Tractor position is changed horizontally.

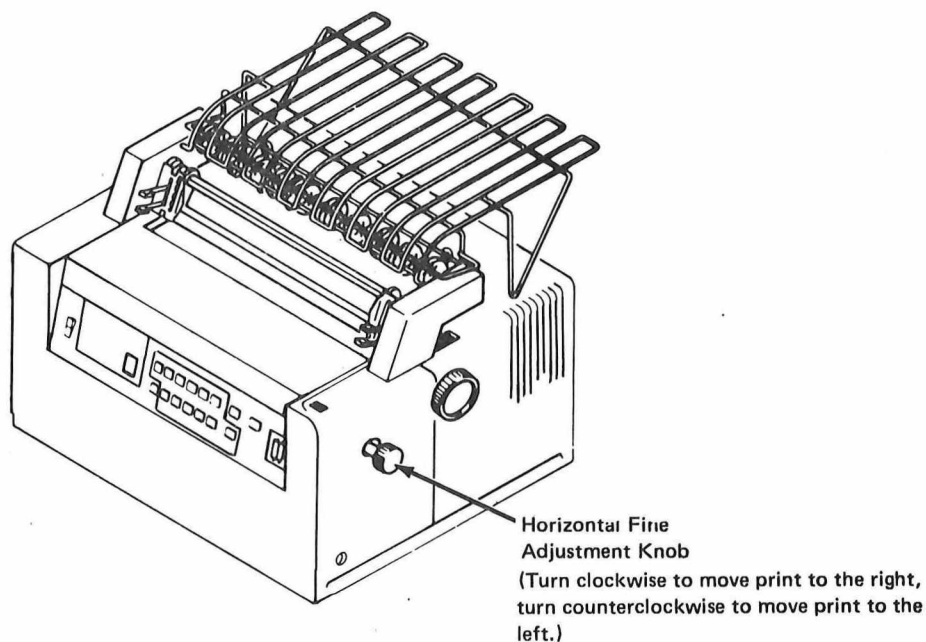
Horizontal Fine Adjustment

This adjustment allows you to adjust the print line to the right or left, approximately 1½ print positions.

Caution: Do not force the Horizontal Fine Adjustment knob past the stop. If you cannot align the first print position properly, set the horizontal fine adjustment knob about midway between the stops and realign the form horizontally, left or right, by moving the Variable Width Form Tractor; then, perform the horizontal fine adjustment again.

Adjust as follows:

- a. Rotate the Horizontal Fine Adjustment knob to the right or to the left, depending upon which way you wish to move the print line on the paper.
 - b. Press (and hold) the Setup switch until a line of "Hs" is printed across the paper. Either advance the paper up by pressing the Index switch or by turning the platen knob. Determine if you need to make further horizontal fine adjustments. If the horizontal adjustment is good, go to step 10, if not, repeat step 9a and 9b.
10. Press the Enable Print switch; your printer is now ready to print.

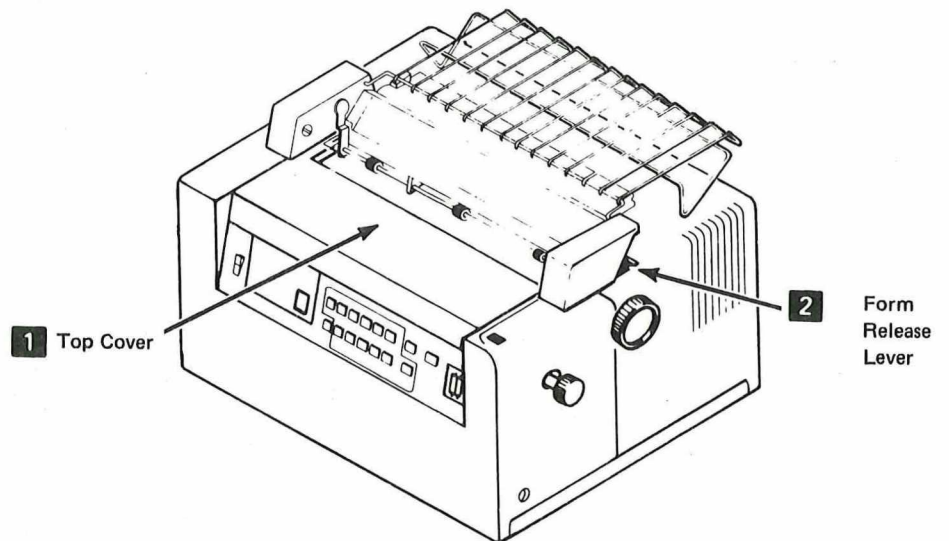


Note: After installing or adjusting the paper forms, and after starting printing operations, you should observe the alignment and positioning of the paper forms as they feed into the printer. Check the margin-punched feed holes in the paper forms to ensure that they are not tearing and that they are not being enlarged.

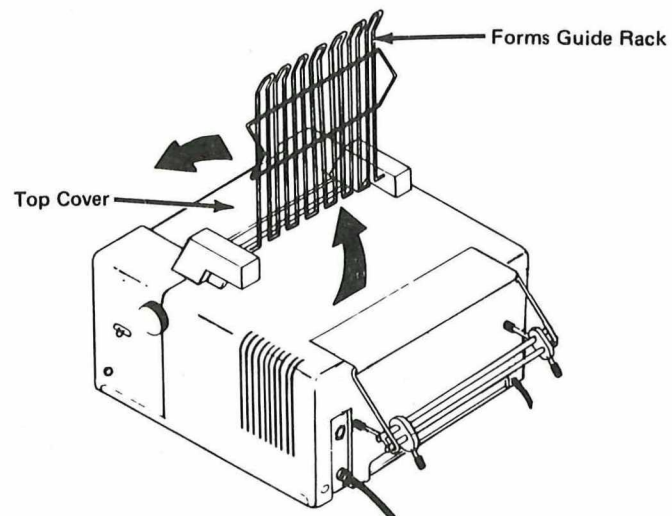
Some additional adjustment of the form guide clips, the tractor assembly, and the positioning of the paper forms supply (located behind the printer) may be required.

Loading Paper Forms With the Friction Feed Paper Handling Device

1. Press the Hold Print switch.
- 2a. (Stage 1 Printers) Pull the clear plastic canopy up and toward the front of the printer.
- 2b. (Stage 2 Printers) Slide the top cover (see **1**) toward the front of the printer.
3. Move the form release lever (see **2**) toward the rear of the printer.

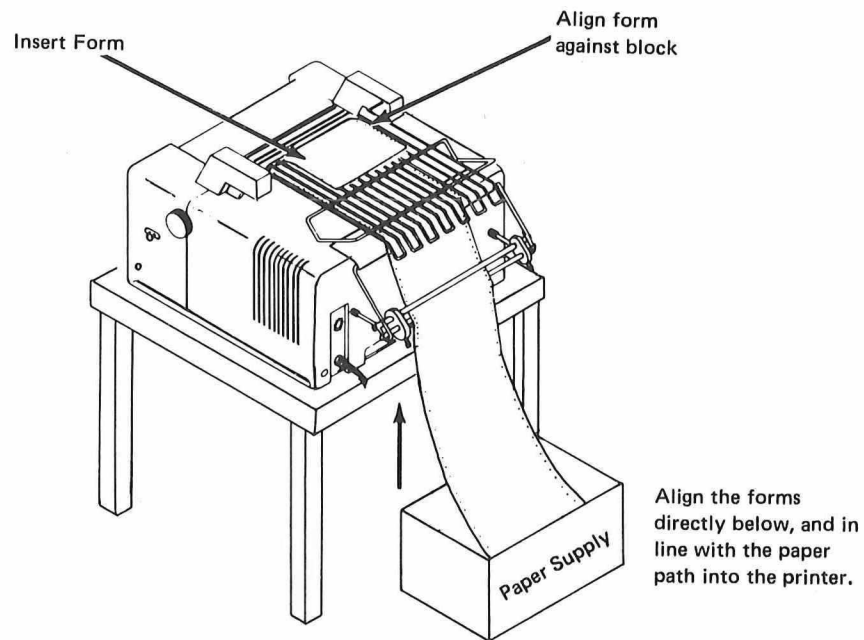


4. Raise the wire forms guide rack up while you are threading the paper; you can swing the forms guide rack all the way forward and let it rest on the canopy (Stage 1 Printers), or the top cover on Stage 2 Printers.

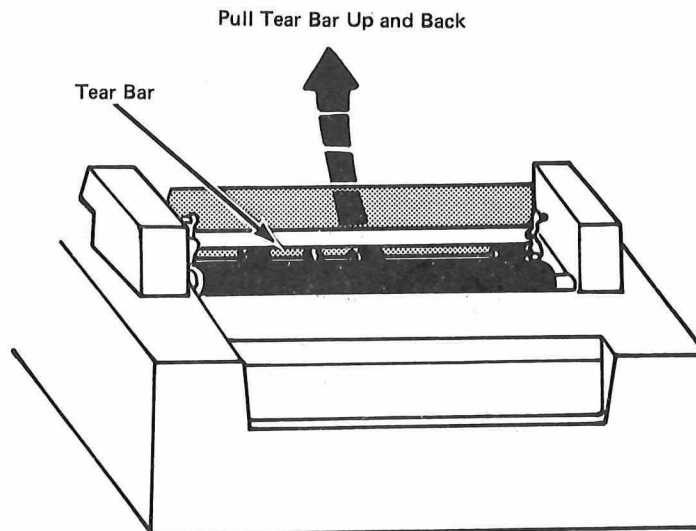


5. Align the stack of paper forms as shown in the following illustration. Keep the forms towards the left side of the forms path. Lower the forms guide rack and insert the form into the slot at the top rear of the friction device. Press down on the Paper handling device to ensure it is seated firmly.

Caution: Position the paper forms supply to feed evenly up and into the printer. Ensure that the printed paper forms coming out of the printer do not drop down onto the paper forms that are being fed up into the printer. Do not block the printer air vents.



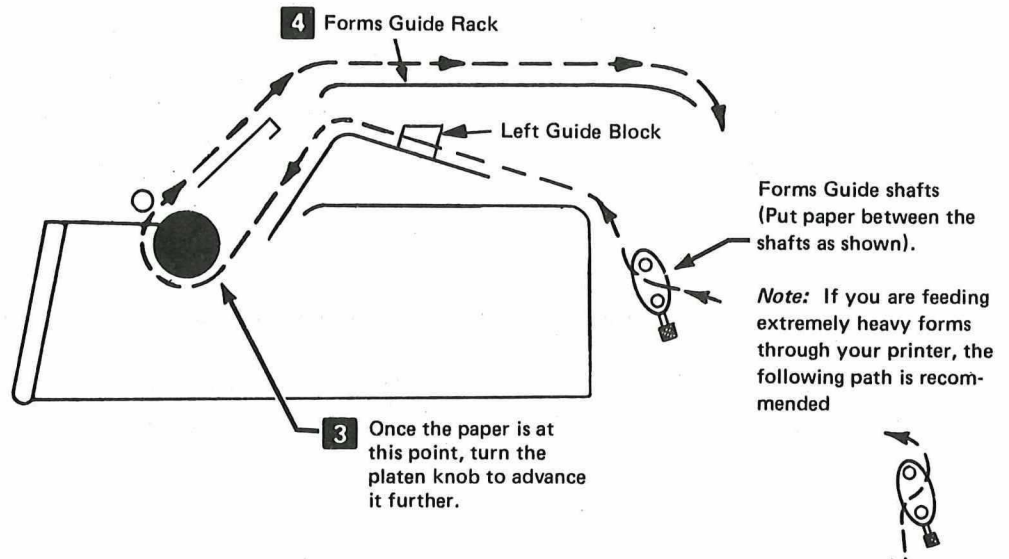
6. Raise the paper pressure roll assembly up by pulling up and back on the center of the tear bar.



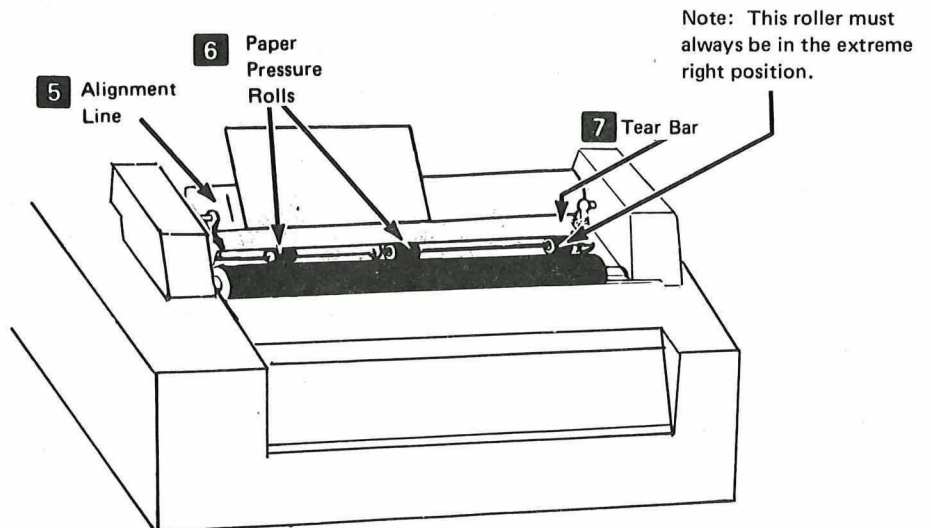
Note: When you insert the paper forms in the following steps, the forms path depends upon the type of paper forms being used.

The paper forms coming up out of the paper supply box should not drag on the sides of the box. (If you continue having problems with the paper feeding out of the box, remove the paper from the box.)

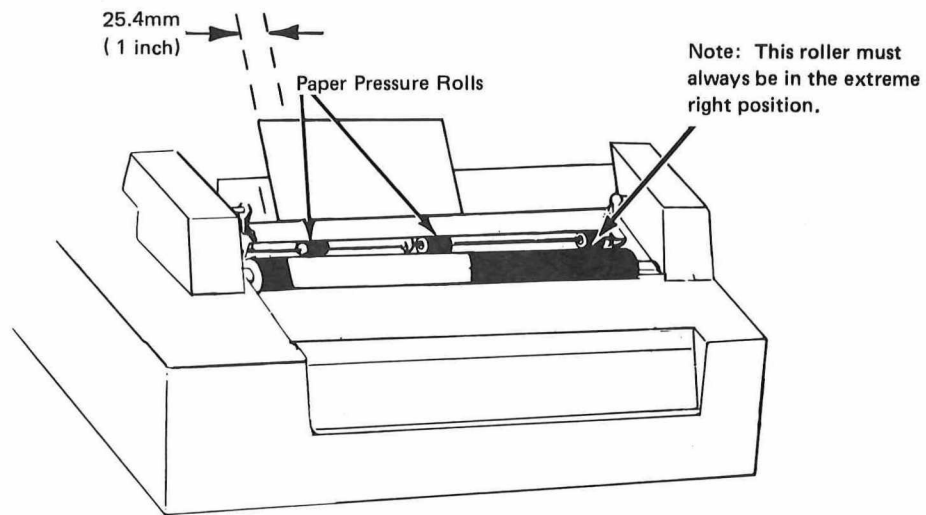
7. Thread the paper forms through the printer, as shown. Once you have the paper inserted between the guide plate and the platen turn the platen knob **3** to advance the paper further.



8. Move the forms release lever toward the front of the printer (refer to step 3 for the location of the forms release lever).
9. Align the left edge of the paper form against the left guide block and the alignment line **5** that is engraved in the front paper guide plate.
10. Lower the paper pressure rolls (see **6**) by pulling forward on the center of the tear bar (see **7**).

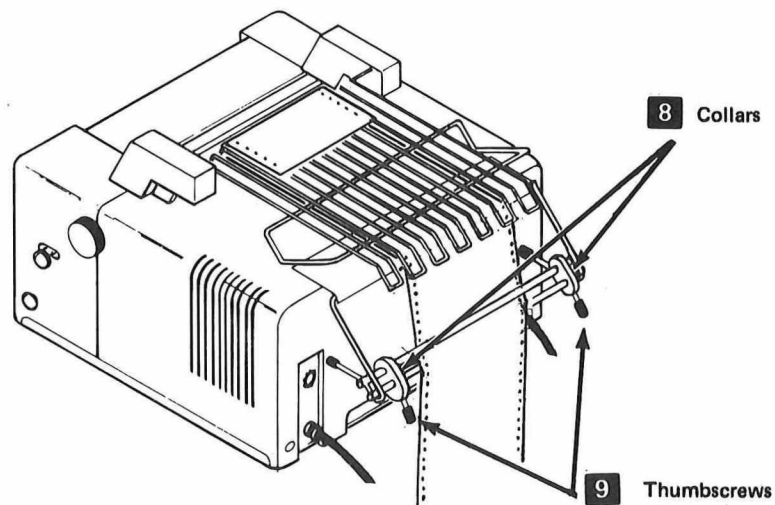


11. Move the paper pressure rolls so that there is a roller on each side of the paper (approximately 25.4 mm (1 inch) from the edge).



CAUTION: It is important to ensure that the paper feeds straight.

12. Position the collars (see **8**) close to the edge of the paper. (Loosen the collars by turning the thumbscrews—see **9** .)



13. Press the Enable Print switch to place your printer in print mode.

Adjusting Paper Forms—For Printers With the Friction Feed Paper Handling Device

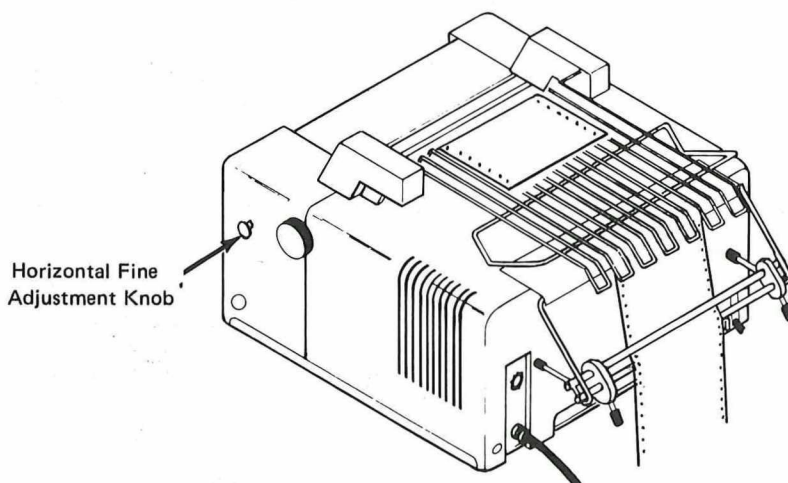
1. Press the Hold Print switch to stop the printing operation. The Hold Print light comes on.
2. Press (and hold) the Setup switch. The letter “H” is then printed across the paper, beginning at print position 1, until print position 132 is reached. For each line of “Hs” needed, you must manually advance the paper or momentarily press the Index switch to advance the paper to the next print line.
3. Determine if you need to make a horizontal fine adjustment to your printer, by looking at the line of “Hs” that were just printed.

If you feel that the first “H” is not too close to the left side of the paper, you can bypass the Horizontal Fine Adjustment and go to step 4.

Note: Horizontal fine adjustment is usually required if a different form is inserted into the printer, or if the Friction Feed Paper Handling Device has just been installed on the printer. If you are using non-preprinted forms on the Friction Feed Paper Handling Device, it is not necessary to do the Horizontal Fine Adjustment; go to step 4.

Horizontal Fine Adjustment

This adjustment allows you to adjust the print line to the right or left, approximately 1½ print positions.



Caution: Do not force the horizontal fine adjustment knob past the stop. If you cannot align the first print position properly, set the horizontal fine adjustment knob about midway between the stops and realign the form horizontally, left or right, by moving the Friction Feed Paper Handling Device; then perform the horizontal fine adjustment again.

Adjust as follows:

- a. Rotate the horizontal fine adjustment knob to the right or to the left, depending upon which way you wish to move the print line on the paper.
 - b. Press (and hold) the Setup switch until a line of "Hs" is printed across the paper. Either advance the paper up, by pressing the Index switch or by turning the platen knob. Determine if you need to make further horizontal fine adjustments.
 - c. If the horizontal adjustment is good, go to step 4; if not, repeat steps 3a and 3b.
4. Determine if you need to make a paper form skew adjustment by observing if the paper forms feed straight through the Friction Feed Paper Handling Device.

If the paper forms are feeding straight on your printer, you can bypass the Skew Adjustment and go to step 5.

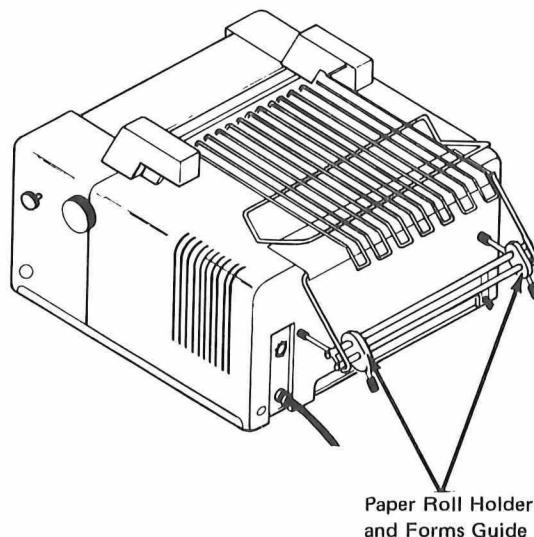
Skew Adjustment

If the paper forms are not feeding straight through the Friction Feed Paper Handling Device, check the following:

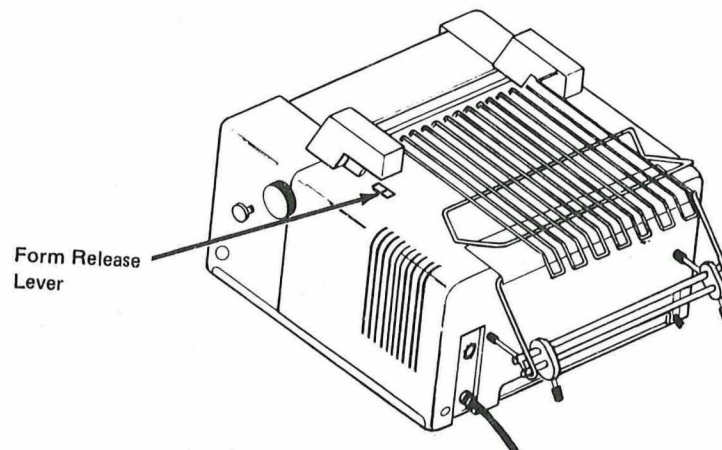
- a. The forms supply must be in line with the paper path.
 - b. The paper holder collars must be adjusted correctly.
 - c. The paper path must be squarely aligned with the alignment block (left side).
 - d. The paper pressure rollers must be set approximately 25.4 mm (1 inch) inside either edge of the paper.
5. Press the Enable Print switch; your printer is now ready to print.

Loading Roll Paper

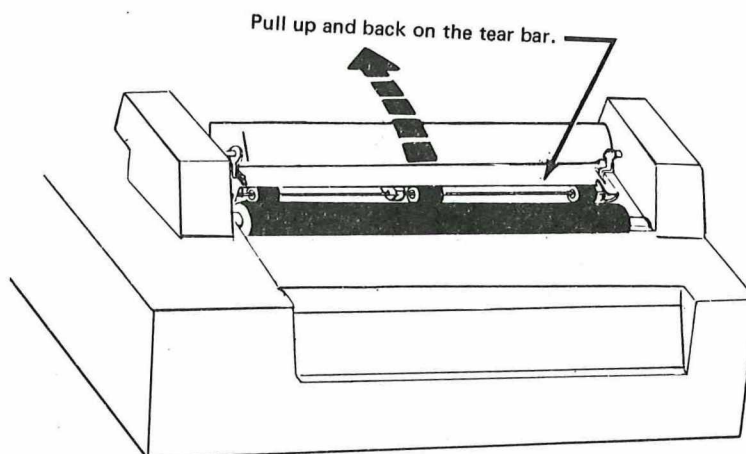
1. Check the back of the printer to determine if the paper roll holder and forms guide is installed (see illustration following). If it is not installed, refer to "Installing the Paper Roll Holder and Forms Guide", in Chapter 5.



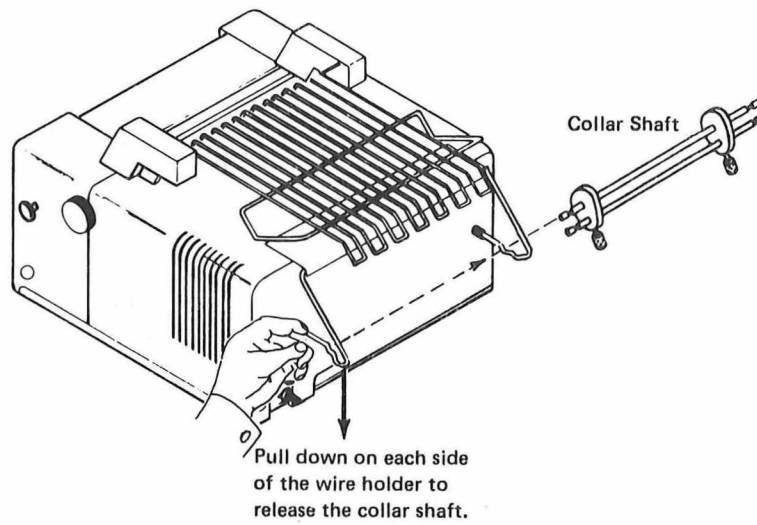
2. Press the Hold Print switch.
3. Move the form release lever toward the rear of the printer.



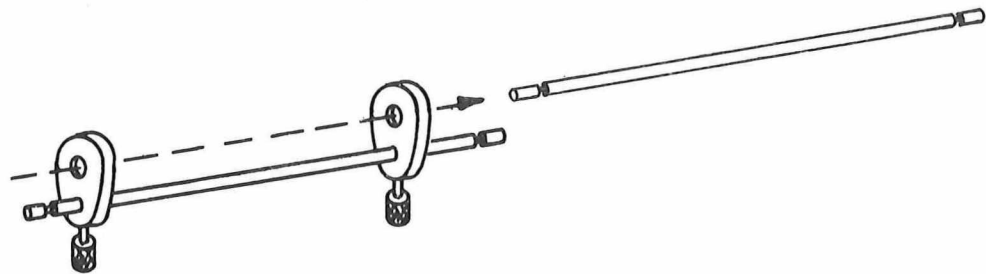
4. Raise the paper pressure rolls up by pulling up and back on the center of the tear bar, as shown:



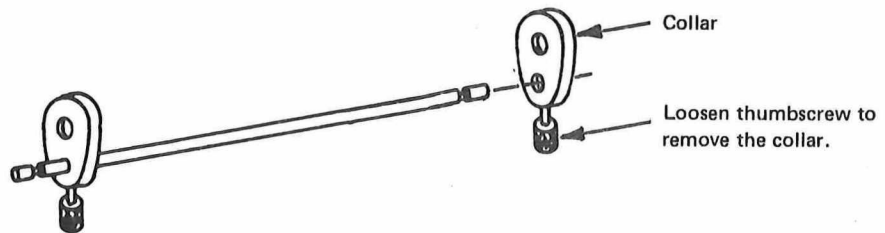
5. Remove the collar shaft, as shown:



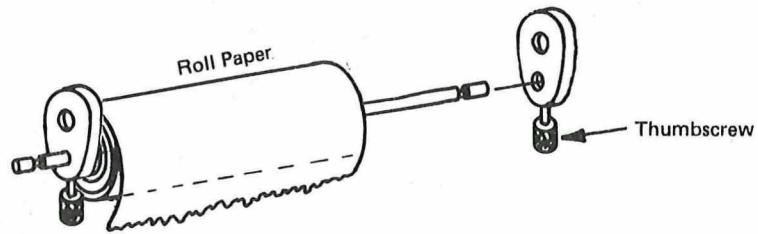
6. Pull out the upper shaft (this will not be used).



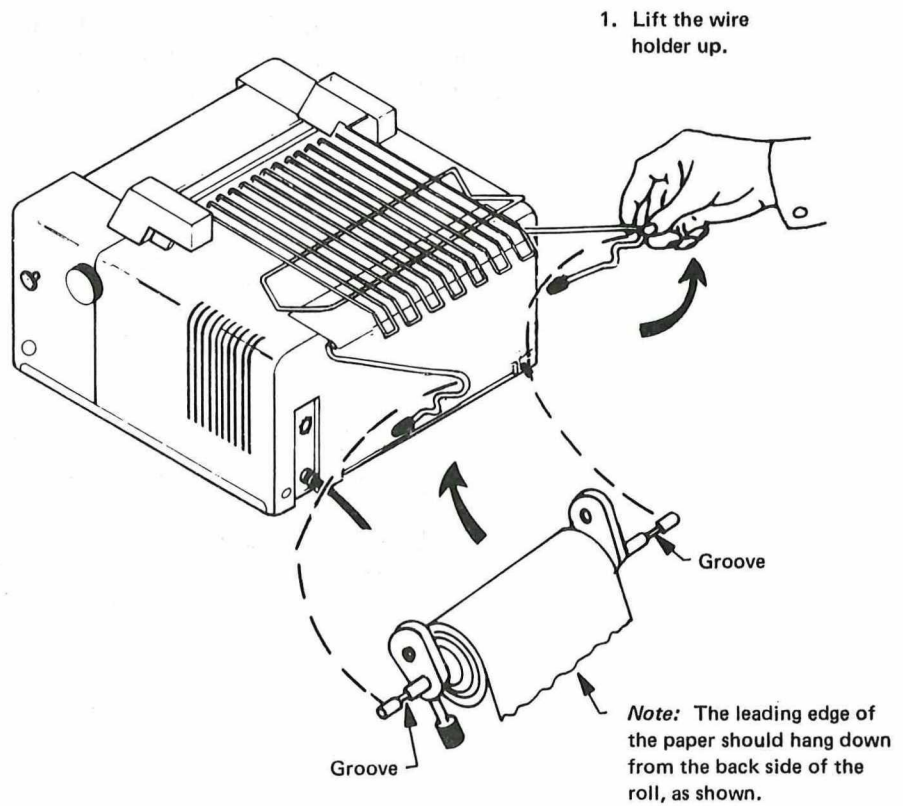
7. Remove one of the collars from the lower shaft by loosening the thumbscrew.



8. Slide the lower shaft into the center of the roll paper and put the collar back on the shaft (do not tighten the thumbscrew on the collar at this time).

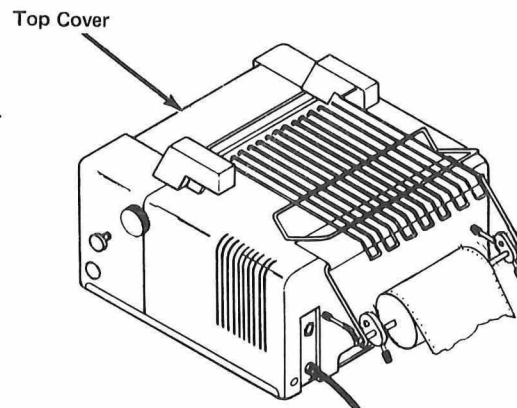


9. Put the collar shaft (with the roll paper on it) onto the wire holder, as shown:

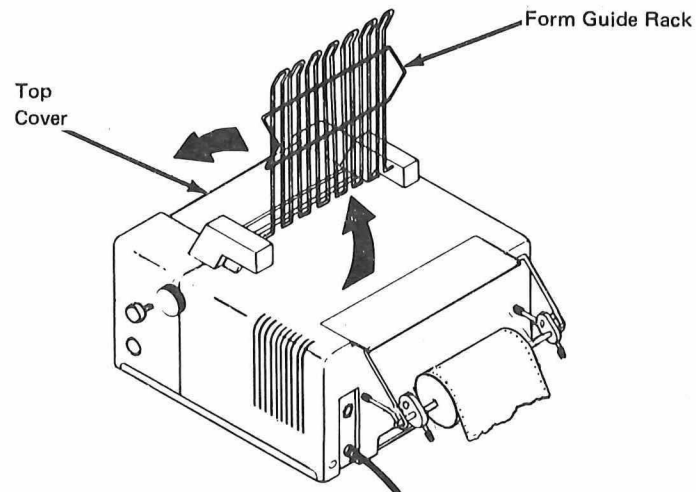


2. Slide the Collar Shaft into the wire holder (make sure the grooves on the shaft fit into the curved parts of the holder).

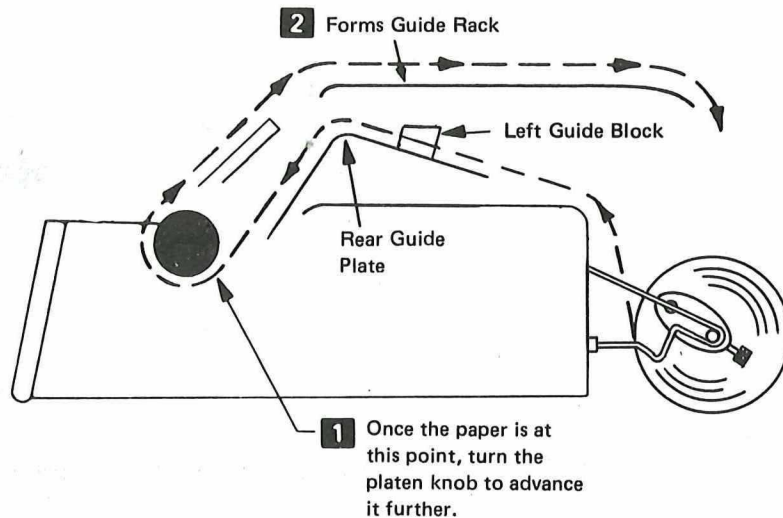
- 10a. Stage 1 Printers: Pull the clear plastic canopy toward the front of the printer.
10b. Stage 2 Printers: Slide the top cover toward the front of the printer.



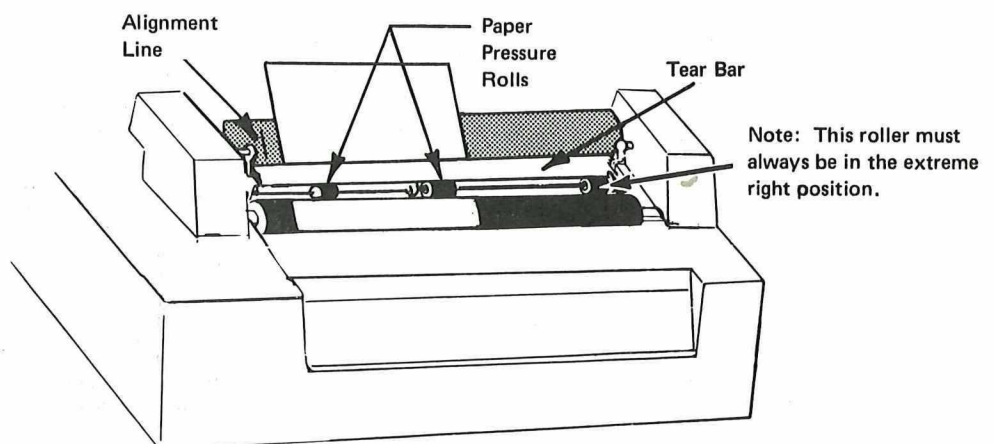
11. Raise the wire forms guide rack up while you are threading the paper; you can swing the forms guide rack all the way forward and let it rest on the canopy (Stage 1 Printers), or on the top cover on Stage 2 Printers.



12. Thread the paper forms through the printer, as shown. Once you have the paper inserted between the rear guide plate and the platen turn the platen knob (see **1**), to advance the paper further. You can now swing the paper forms guide rack (see **2**) back to its normal position.

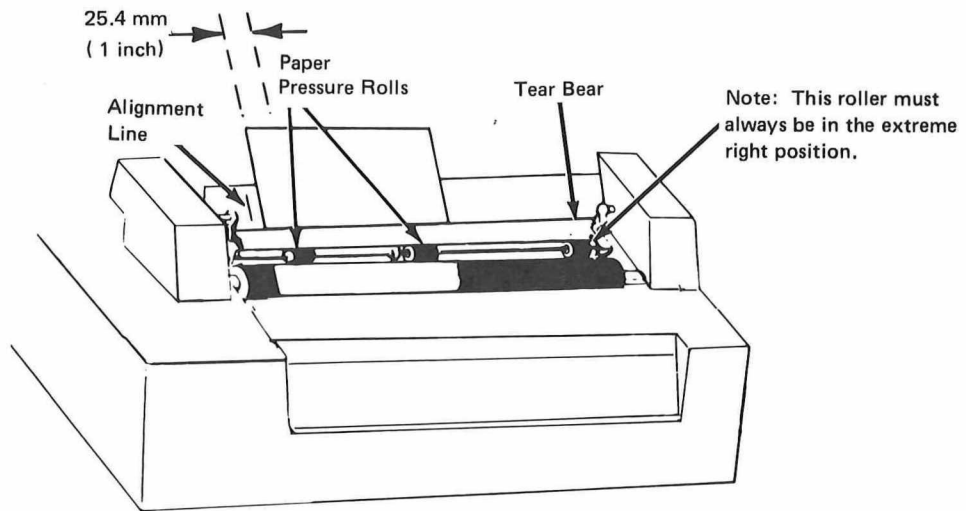


13. Align the left edge of the paper form against the left guide block and on the alignment line that is engraved in the front paper guide plate.



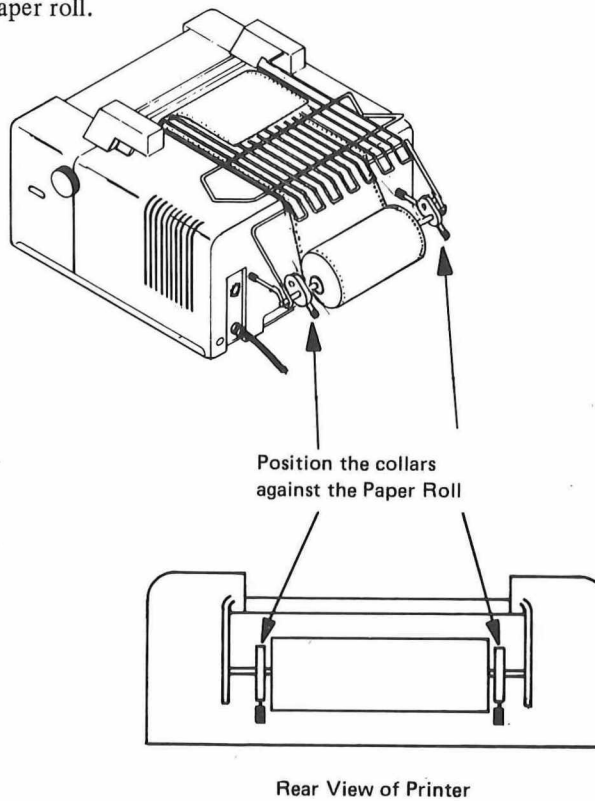
14. Lower the paper pressure rolls by pulling forward on the center of the tear bar.
15. Move the form release lever toward the front of the printer (refer to step 3 for the location of the form release lever).

16. Move the paper pressure rolls so that there is a roller on each side of the paper (approximately 25.4 mm (1 inch) from the edge).



CAUTION: It is important to ensure that the paper feeds straight.

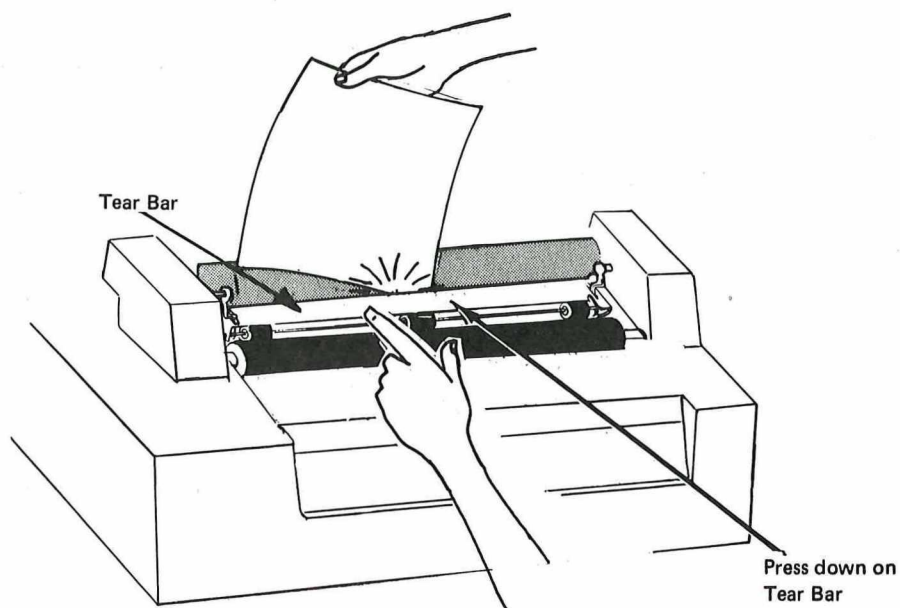
17. Position the collars on either side of the paper roll, leaving just enough space to allow the paper roll to turn freely without forcing the shaft to turn with the paper roll.



Tearing Off Paper Forms (For Friction Feed Paper Handling Only)

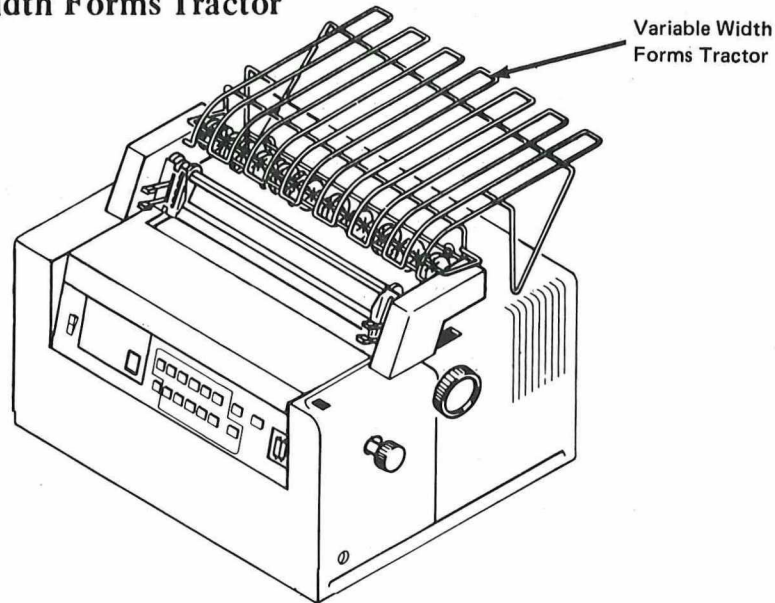
Use the following procedure to tear off the forms.

1. Press the Hold Print switch.
2. Press (and hold) the Index switch until the required amount of paper has been spaced above the tear bar.
3. With one hand, press and hold the tear bar forward so that the paper is clamped tightly against the plate behind the paper. Then, with your other hand, tear the paper across the tear bar, as shown.
4. Press the Enable Print switch. Your printer is now ready to print.



Chapter 5. Installing and Removing Paper Handling Devices

Installing the Variable Width Forms Tractor



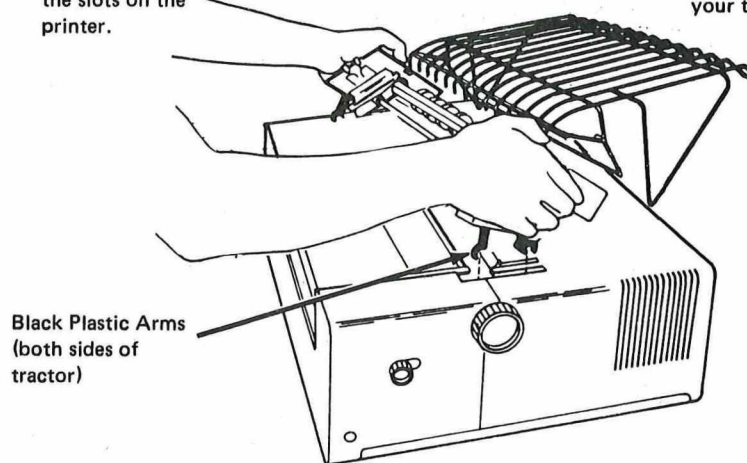
Install as follows:

Press the Hold Print switch.

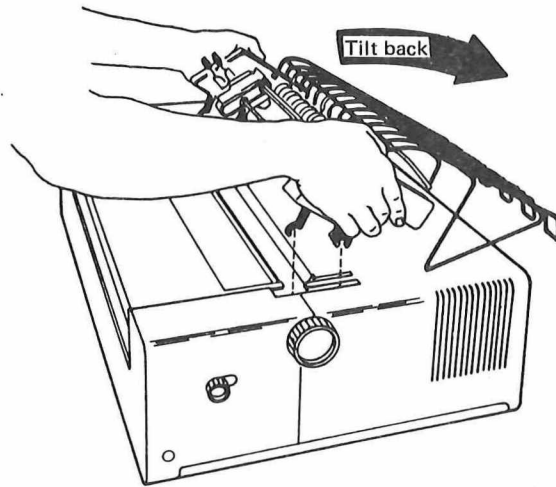
Note: If your printer currently has the Friction Feed Paper Holding Device installed, it must be removed before this device can be installed (refer to "Removing the Friction Feed Paper Holding Device", in this chapter).

- 1 Hold the forms tractor so that the black plastic arms are above the slots on the printer.

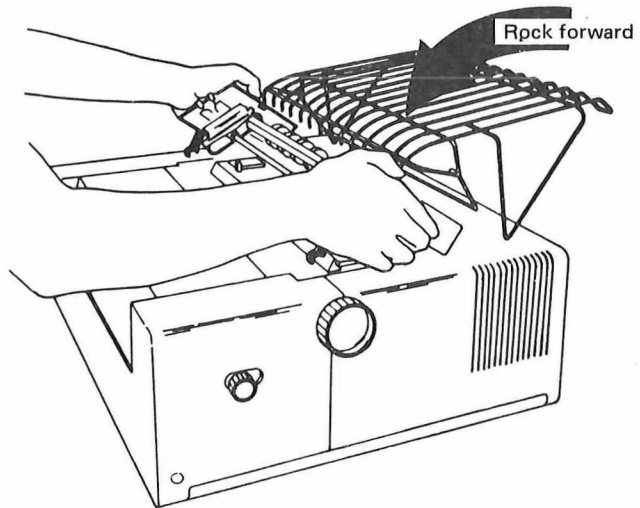
Caution: Prevent the wire paper guide from swinging forward toward you, by holding it securely with your thumbs, as shown.



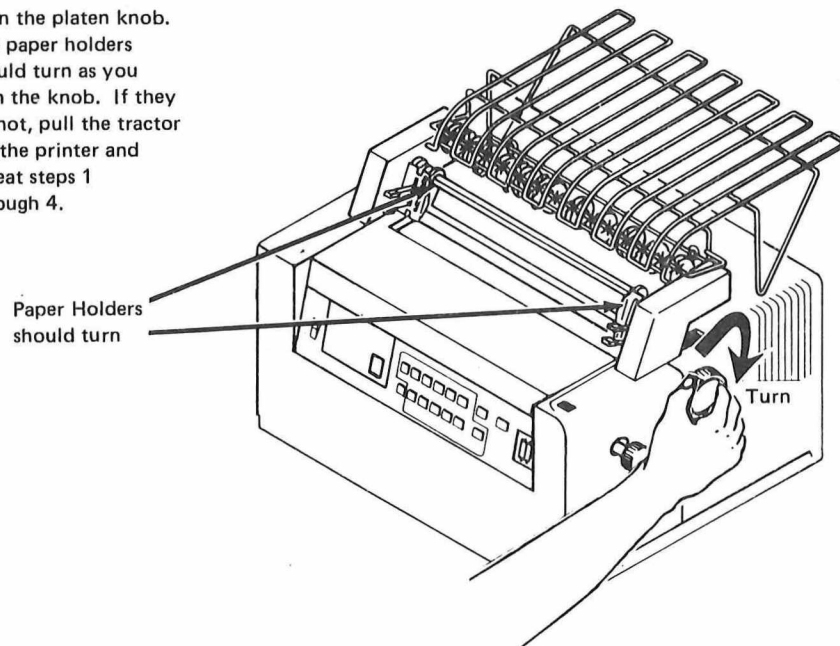
- 2** Tilt the tractor back and insert the two rear arms into the rear slots (the arms should go down on the metal shafts inside the slots). Then push down firmly at the rear until the rear arms snap into place.



- 3** Rock the tractor forward until the front arms go into the slots. Then, press down firmly until the front arms snap into place.



- 4** Turn the platen knob. The paper holders should turn as you turn the knob. If they do not, pull the tractor off the printer and repeat steps 1 through 4.

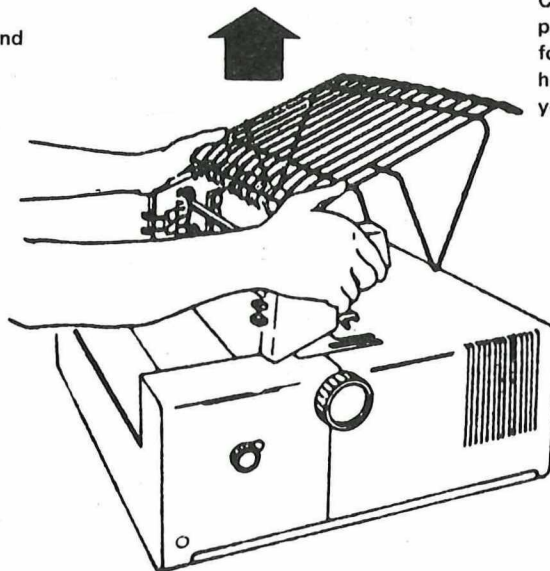


Removing the Variable Width Forms Tractor

Remove as follows:

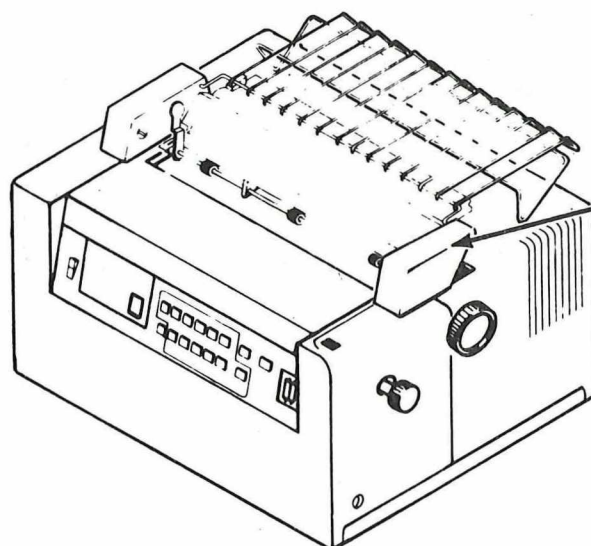
1. Press the Hold Print switch.
2. Set the Power switch to Off.
3. Remove any paper forms that may be in the printer.
4. Hold the forms tractor as shown, tilt the unit forward (toward the operator panel), then pull the entire tractor unit (including the wire paper rack) up and off the printer.

Pull the entire tractor unit up and off the printer.



Caution: Prevent the wire paper guide from swinging forward toward you, by holding it securely with your thumbs, as shown.

Installing the Friction Feed Paper Handling Device



Friction Feed Paper Handling Device

Install as follows:

Press the Hold Print switch.

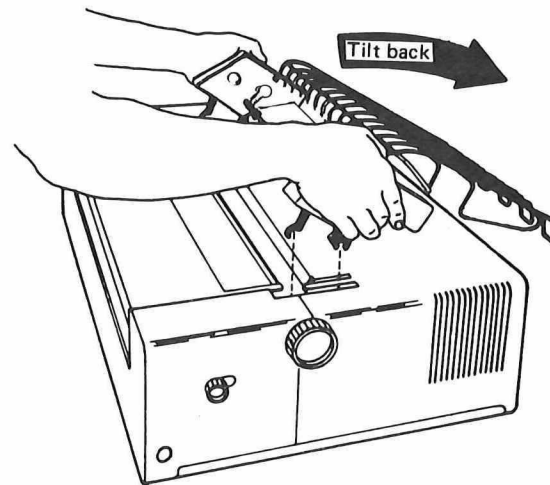
Note: If your printer currently has the Variable Width Forms Tractor installed, it must be removed before this device can be installed (refer to "Removing the Variable Width Forms Tractor", in this chapter).

- 1** Hold the device so that the black plastic arms are above the slots on the printer.

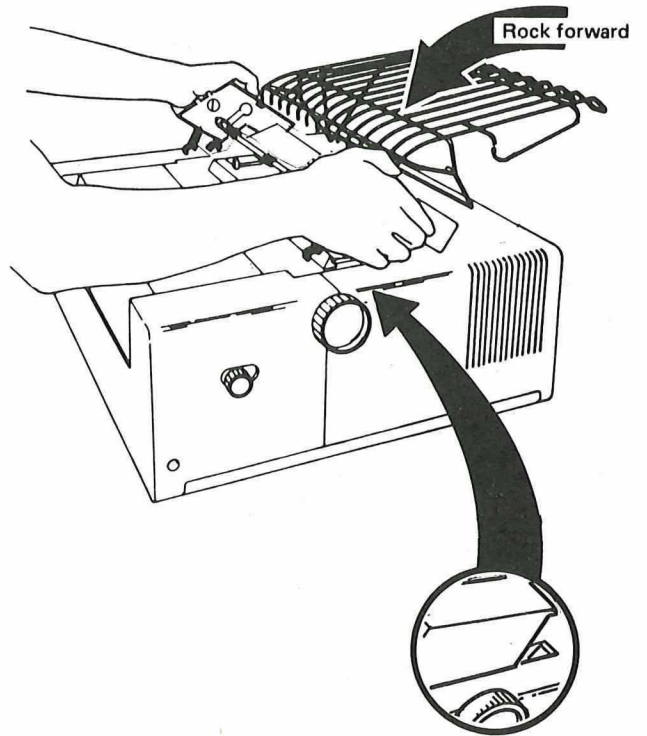
Caution: Prevent the wire paper guide from swinging forward and hitting you, by holding it securely as shown.

Black Plastic Arms
(both sides of
tractors)

- 2** Tilt the device back and insert the two rear arms into the rear slots (the arms should go down on the metal shafts inside the slots). Then, push down firmly at the rear until the rear arms snap into place.

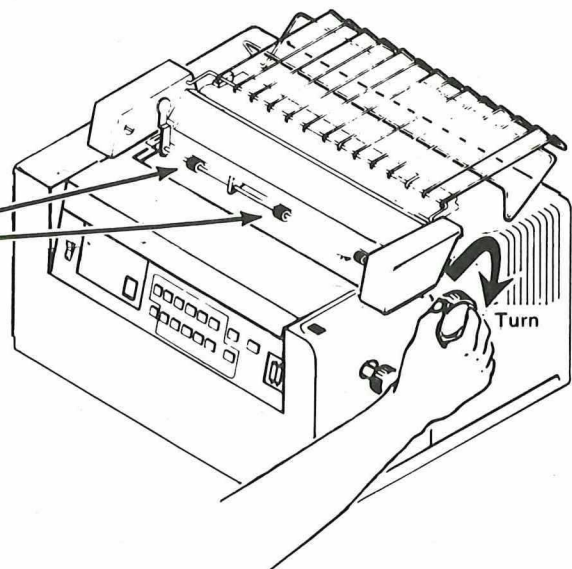


- 3** Rock the device forward until the front arms go into the slots. Then, press down firmly until the front arms snap into place.



- 4** Turn the platen knob. The rubber rollers should turn as you turn the knob. If they do not, pull the device off the printer and repeat steps 1 through 4.

These two Rubber rollers should turn

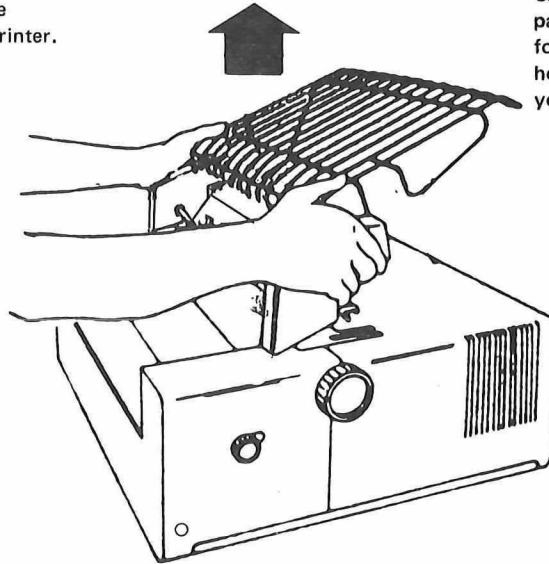


Removing the Friction Feed Paper Handling Device

Remove as follows:

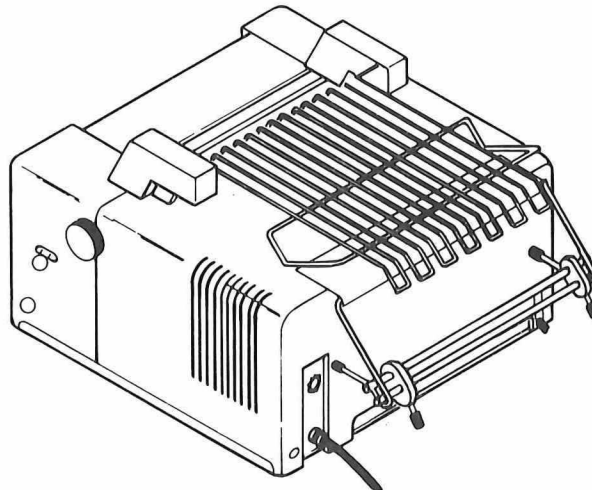
1. Press the Hold Print switch.
2. Set the Power switch to Off.
3. Remove any paper forms that may be in the printer.
4. Hold the Friction Feed Paper Handling Device as shown below, tilt the unit forward (toward the operator panel) then pull the entire device (including the wire paper rack) up and off the printer.

Pull entire device
up and off the printer.



Caution: Prevent the wire
paper guide from swinging
forward toward you, by
holding it securely with
your thumbs, as shown.

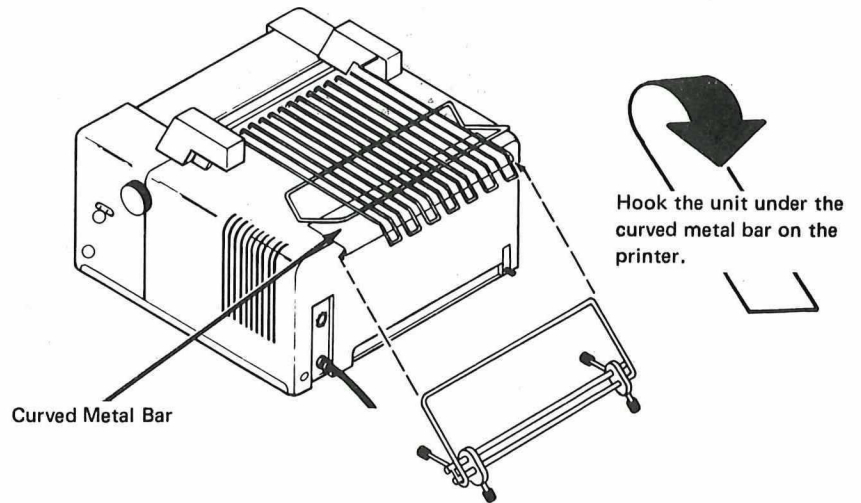
Installing the Paper Roll Holder and Forms Guide



Paper Roll Holder and Forms Guide
(shown attached to the rear of the
printer)

Install as follows:

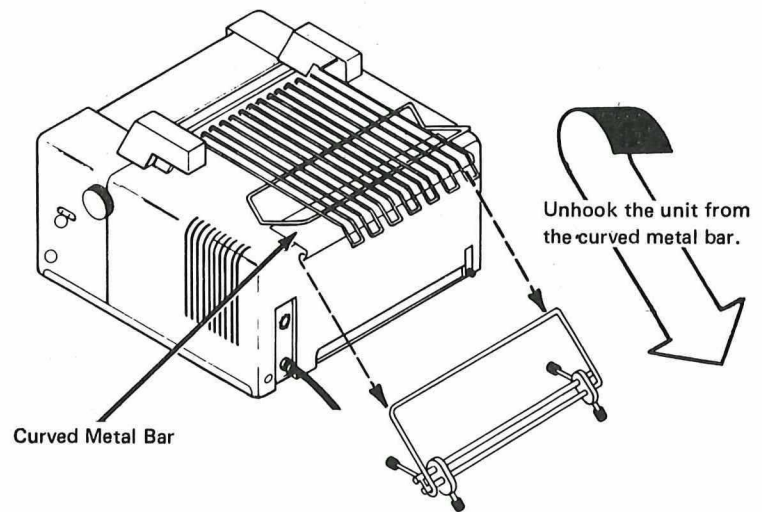
Hook the Paper Roll Holder and Forms Guide at the rear of the printer.



Removing the Paper Roll Holder and Forms Guide

Remove as follows:

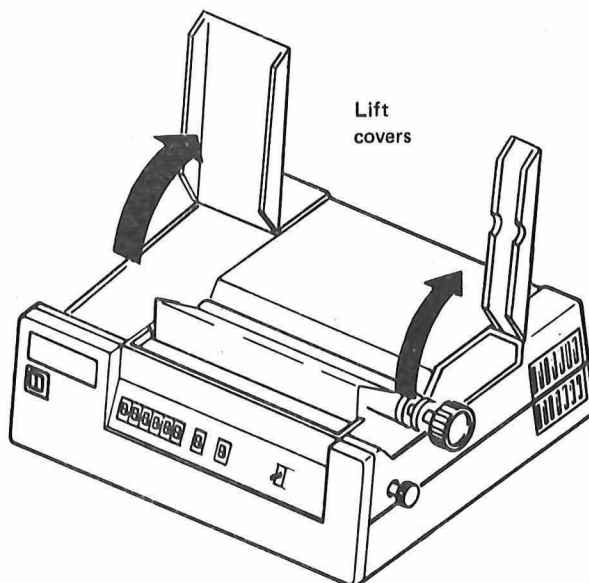
Remove the Paper Roll Holder and Forms Guide by unhooking it from the curved metal bar at the rear of the printer



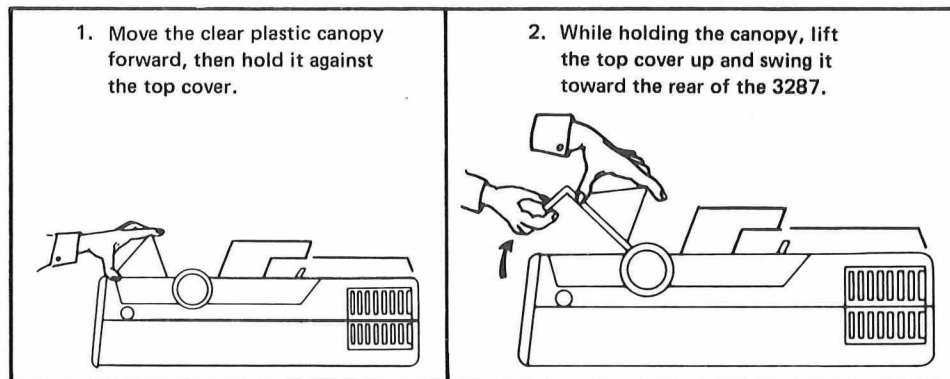
Removing the Platen (Stage 1 Printers)



1. Press the Hold Print switch.
2. Set the Power switch to Off.
3. Remove the paper forms from the printer.
4. Remove the paper handling device from the printer (either the Variable Width Forms Tractor or the Friction Feed Paper Holding Device, depending upon which one is installed on your printer; instructions for removing both types are in this chapter).
5. Open the left and right top covers, as shown:

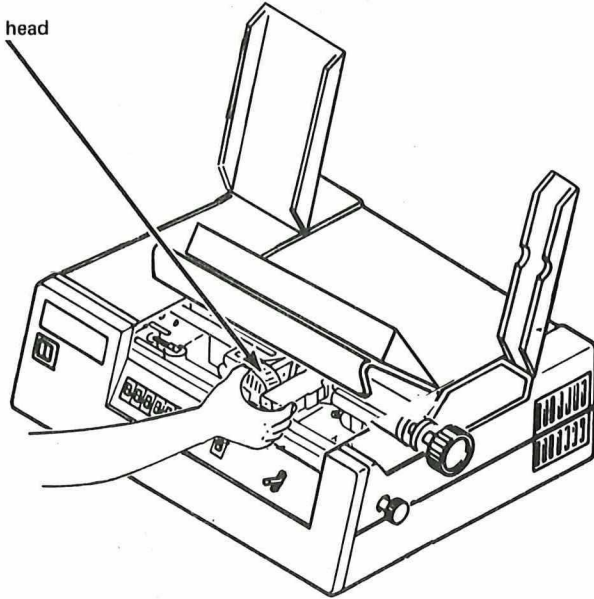


6. Lift the top center cover, as shown:

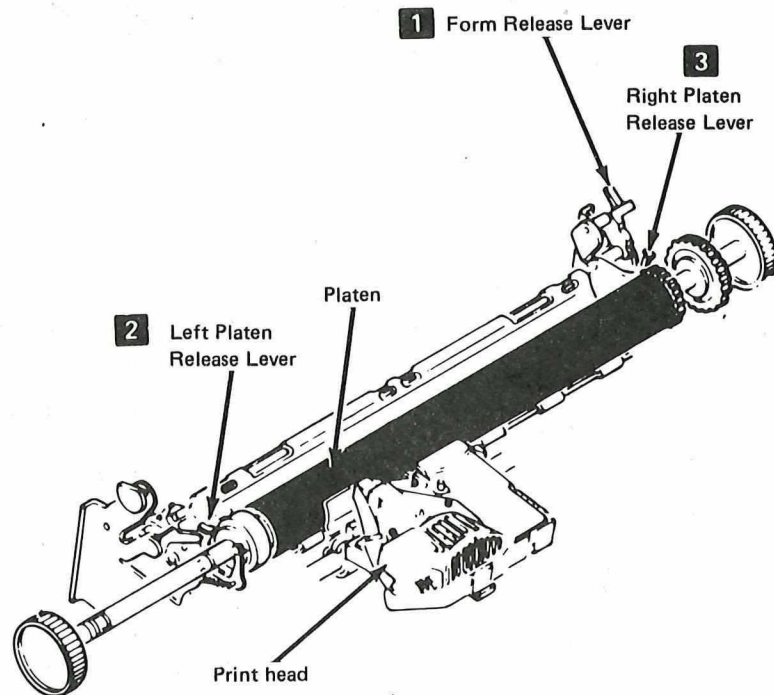


7. Grasp the print head with your hand and move it to about the center of the platen.

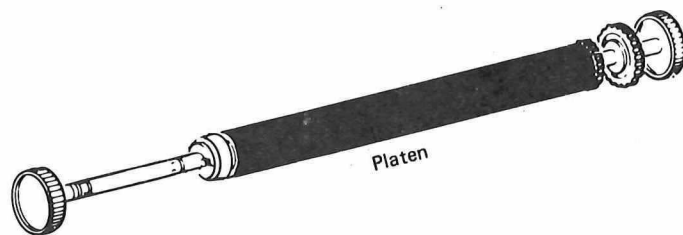
Print head



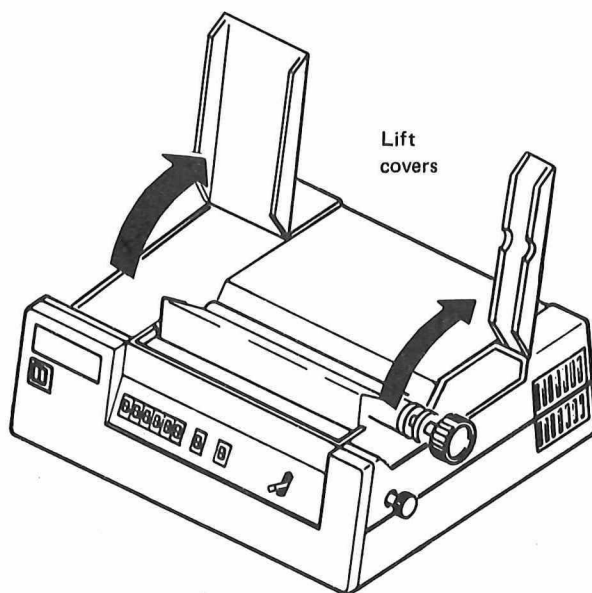
8. Lower the top center cover (that you opened in step 6), keeping the canopy toward the front of the printer.
- 9a. Check to be sure the form release lever is in the forward position (see **1**).
- b. Press down and hold the left platen release lever (see **2**) and the right platen release lever (see **3**) with your thumbs as you lift the platen up and out of the printer.



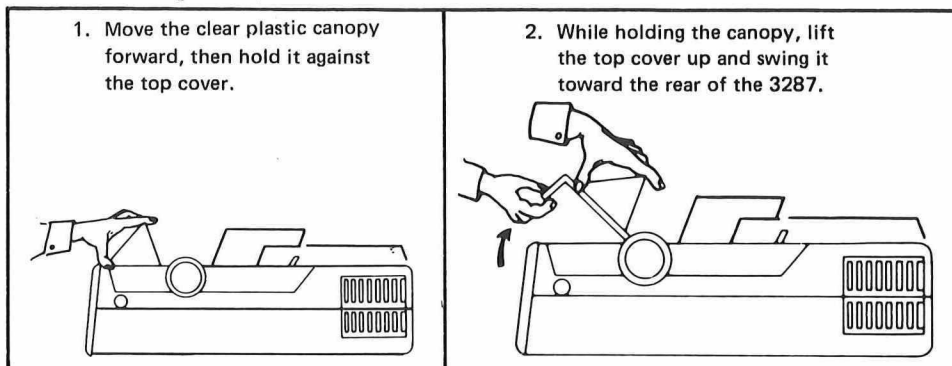
Replacing the Platen (Stage 1 Printers)



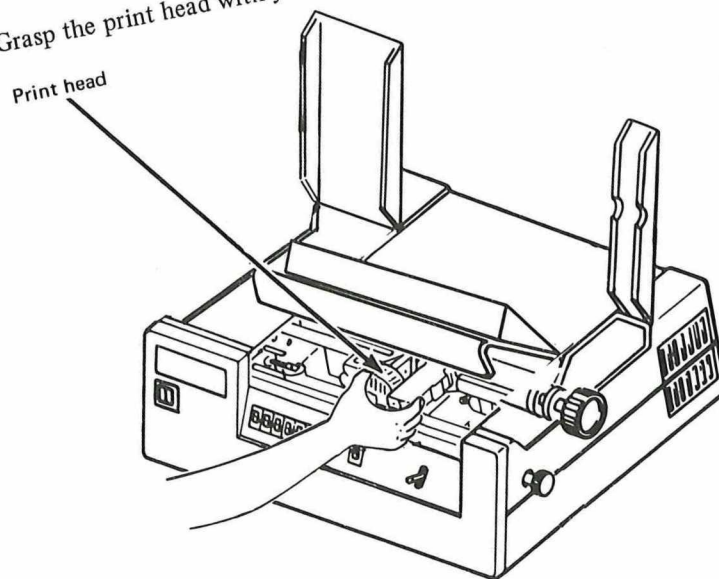
1. Press the Hold Print switch.
2. Set the Power switch to Off.
3. Open the left and right top covers, as shown:



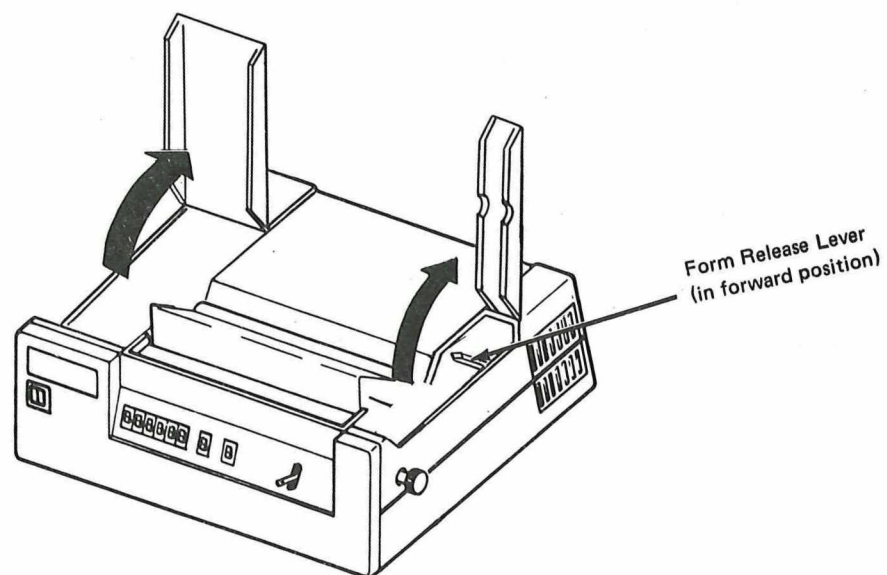
4. Lift the top cover, as shown:



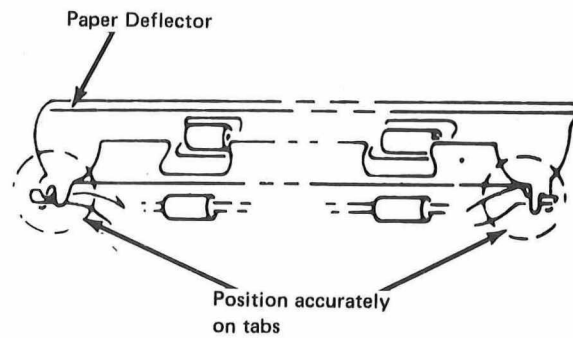
5. Grasp the print head with your hand and move it to about the center of the platen.



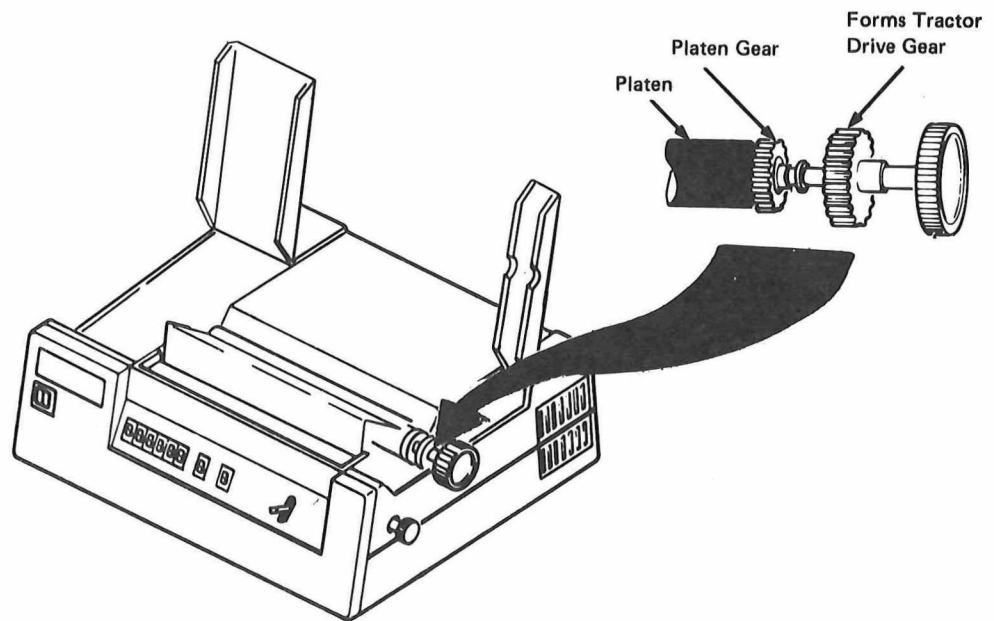
6. Lower the top cover (that you opened in step 4), keeping the canopy toward the front of the printer.
7. Check to be sure the form release lever is in the forward position.



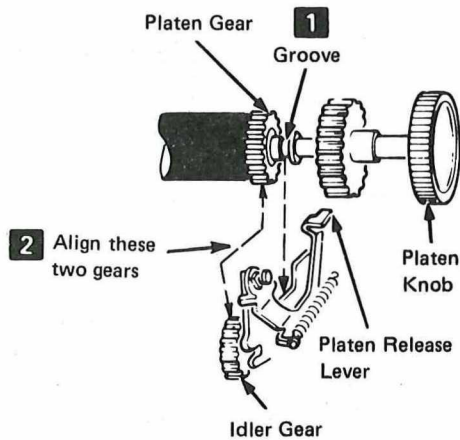
8. Check to ensure that the U-shaped metal paper deflector (which wraps around the bottom of the platen, when it is installed) is properly positioned on the small tabs at both ends.



9. Hold the platen with the platen gears positioned to the right side of the printer.



10. Place the groove (see **1**) next to the platen gear onto the right platen latch and align the platen gear with the idler gear (see **2**).

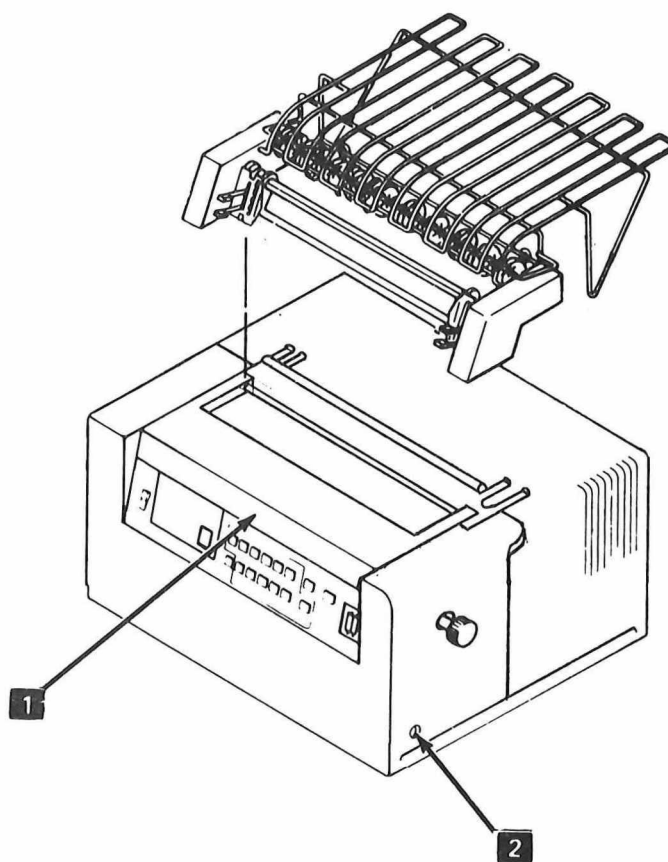


11. When the gears are aligned, press down on both ends of the platen. (The platen snaps into position if you have aligned it properly.) Rotate the platen by turning one of the platen knobs. Ensure that the platen gear and the idler gear (refer to the illustration in step 10) mesh properly and turn together.
12. Close the top covers and move the clear plastic canopy to the rear position.

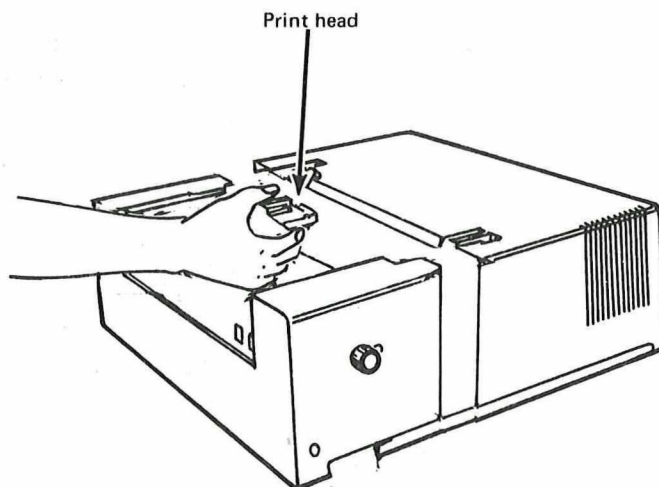
Removing the Platen (Stage 2 Printers)



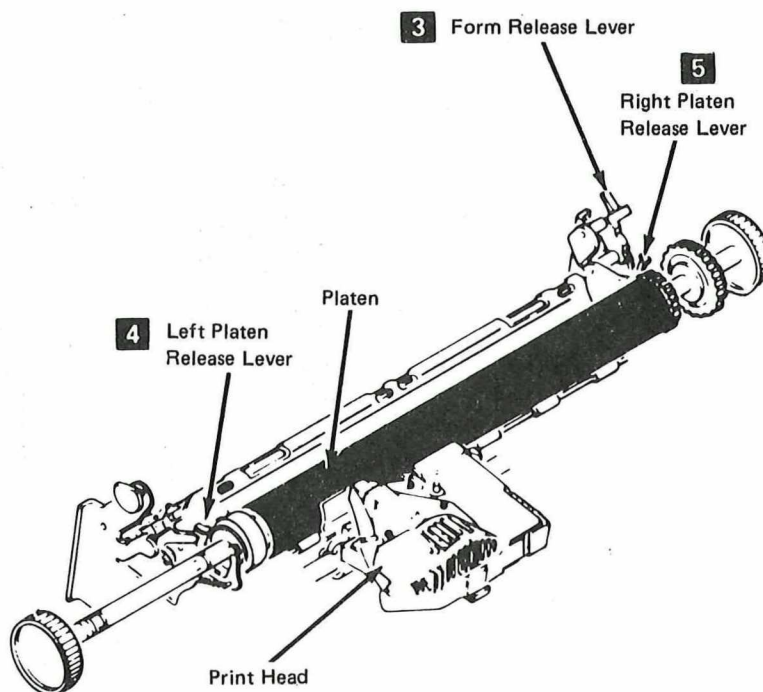
1. Press the Hold Print switch.
2. Set the Power switch to Off.
3. Remove the paper forms from the printer.
4. Remove the paper handling device from the printer (either the Variable Width Forms Tractor or the Friction Feed Paper Holding Device, depending upon which one is installed on your printer; instructions for removing both types are in this chapter).
5. Slide the top cover **1** toward the front of the printer.
6. Press the Release Pusbuttons **2** on each side of the front cover and slide the cover forward enough to remove the platen.



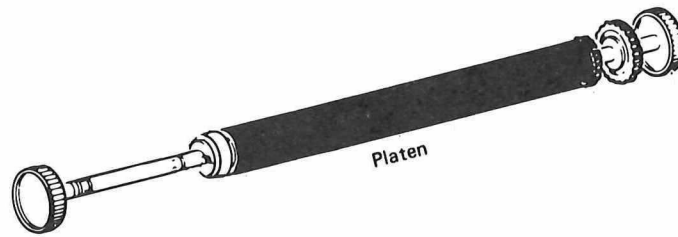
7. Grasp the print head with your hand and move it to about the center of the platen.



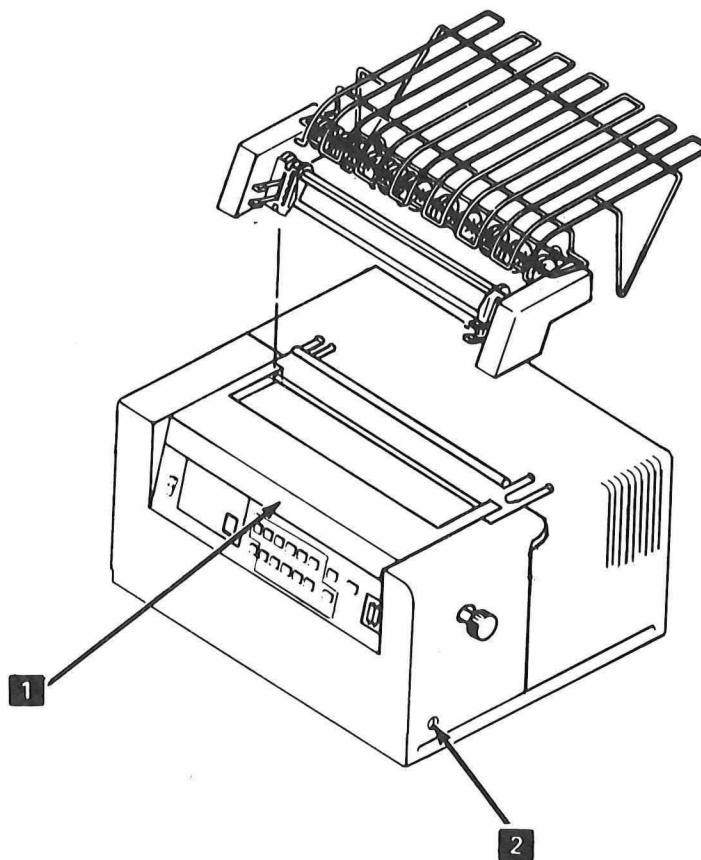
- 8a. Check to be sure the form release lever (see **3**) is in the forward position.
8b. Press down and hold the left platen release lever (see **4**) and the right platen release lever (see **5**) with your thumbs as you lift the platen up and out of the printer.



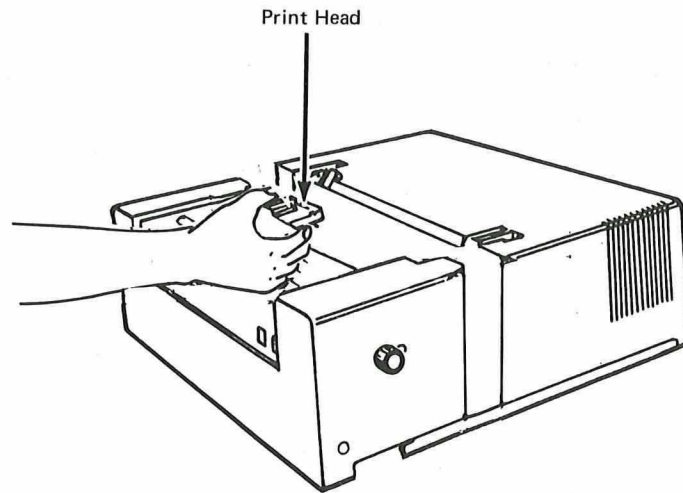
Replacing the Platen (Stage 2 Printers)



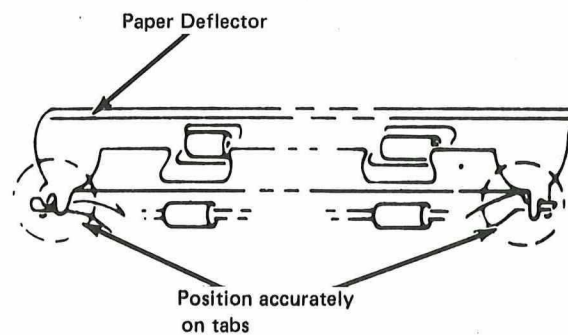
1. Press the Hold Print switch.
2. Set the Power switch to Off.
3. Slide the top cover **1** toward the front of the printer.
4. Press the Release Pushbuttons **2** on each side of the front cover and slide the cover forward far enough to install the platen.



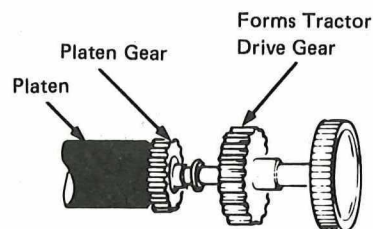
5. Grasp the print head with your hand and move it to about the center of the platen.



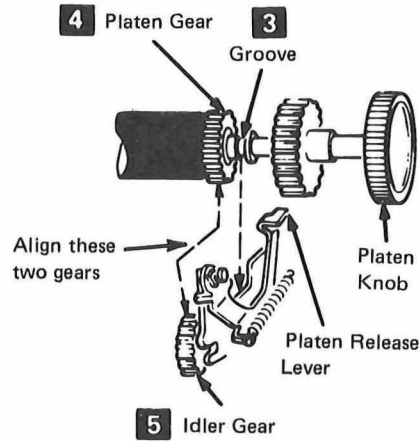
6. Check to be sure the Form Release Lever is in the forward position.
7. Check to ensure that the U-shaped metal paper deflector (which wraps around the bottom of the platen, when it is installed) is properly positioned on the small tabs at both ends.



8. Hold the platen with the platen gears positioned to the right side of the printer.



9. Place the groove (see **3**) next to the platen gear (see **4**) onto the right platen latch and align the platen gear with the idler gear (see **5**).



10. When the gears are aligned, press down on both ends of the platen. (The platen snaps into position if you have aligned it properly.) Rotate the platen by turning one of the platen knobs. Ensure that the platen gear and the idler gear (refer to the illustration in step 8) mesh properly and turn together.
11. Slide the front cover toward the rear of the printer until it latches.
12. Install the paper handling device.
13. Insert the paper forms.
14. Place the Forms Release lever in the correct position.
15. Turn Power on.
16. Press the Enable Print switch.

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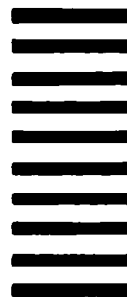
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